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THE THUNDERWEAPON
IN RELIGION AND FOLKLORE

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THE THUNDERWEAPON IN RELIGION AND FOLKLORE

A STUDY IN COMPARATIVE ARCHAEOLOGY

BY

CHR. BLINKENBERG, PH.D.

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PREFACE

THIS study has its origin in an attempt to set out the historical relations between the ideas about the thunder-weapon which are known to have prevailed on Greek soil at various periods: in the Mycenæan age (the double-axe of bronze), in the early historical ages (the classical keraunos, the thunder-weapon of Zeus), and in modern ages (the stone axes). It proved, however, impossible to arrive at any well-grounded opinion from a consideration of Greek territory only, for the evolution in Greece did not become intelligible until seen in its connection with the corresponding ideas among other peoples.

With regard to the Greek subject-matter, the form in which the result of the investigation is here put forward has been influenced by the appearance of Usener's treatise, *Keraunos* (in the Rheinisches Museum 1905) and Jacobsthal's book, *Der Blitz in der orientalischen und griechischen Kunst* (1906).

The main reason why the ideas of Scandinavia, and not those of ancient Greece, were made the starting-point in the exposition, was the fact that no publication concerning them had hitherto appeared in literature. The greater part of the matter had first to be collected from the existing popular tradition. For all kind help rendered to him in this task, the author now gives his best thanks. Many communications have been received through the *Dansk Folkemindesamling* (Danish Folklore Collection) in answer to an appeal in the papers. Another part of the material, which proved to be of the first importance in regard to the questions treated here, had also to be brought before the public from collections made at first hand, viz. the objects belonging to the thunderstone worship in southern India, procured by Mr Löventhal, a missionary, and sent by

him, accompanied by his careful observations, to the National Museum.

In order not to burden the text with the many details involved in the investigation, or the many sources, printed or unprinted, to which reference had to be made, it was found necessary to collect these in a special chapter (X.), to the paragraphs of which reference is made in the text by figures placed in square brackets [ ]. Here, in the first place, the new material from Denmark is given, with a statement of the locality and the informant; the reports received from the *Dansk Folkemindesamling* are marked D.F.S. Next follows a geographically arranged account of the traditions of other countries, with more or less copious extracts from the sources, and with an explanation of particular questions, where it was deemed necessary for a clear understanding of the subject. Only in regard to Scandinavia has an account been given of, or a reference made to, everything that has come to the knowledge of the author.

In collecting the scattered material from foreign countries, the works on thunderbolts, already published, have been of great help, especially the following:

JOHN EVANS, *The Ancient Stone Implements, Weapons, and Ornaments of Great Britain*, 1st ed. (1872), pp. 50–58; 2nd ed. (1897), pp. 55–65.

MONTELIUS, *Sveriges forntid* (1874), pp. 160–162.

CARTAILHAC, *L'âge de pierre dans les souvenirs et superstitions populaires* (Paris, 1878).

ANDREE, *Der Donnerkeil*, in *Mittheil. der Anthropol. Gesellschaft in Wien*, 1882; enlarged and reprinted in *Ethnographische Parallelen und Vergleiche, Neue Folge* (1889), pp. 36–41.

H. F. FEILBERG, *Ordbog over jyske almuesmål.*

PAUL COGELS, *Céraunies et pierres de foudre*, Anvers, 1907 (*Bulletin de l'acad. royale d'archéologie de Belgique*, 1907, IV.).

Dr H. F. Feilberg has with great kindness permitted the author to make use of his unprinted collections for the article "Thunderstone" in his dictionary, and has referred him to much other matter in folk-lore reviews that would not otherwise have come to his knowledge.

For the information of the English reader it only remains to be said that by the "National Museum" the National Museum in Copenhagen is always to be understood.

The Danish edition of *The Thunderweapon* was published in 1909 by Tillge, Copenhagen, as No. 79 of the series *Studier fra Sprog- og Oldtidsforskning udgivne af det philologisk-historiske Samfund.* To the present book much new material and a number of new illustrations have been added. Some of the photographs were taken in foreign museums, and one (No. 2) in a remote mountain village of southern India.

It was made possible to obtain these illustrations and to arrange for an English translation by a subvention from the Carlsberg Fund, to which the author begs to express his most grateful thanks. For the careful rendering of the Danish text he is indebted to the kindness of Miss Ingeborg Fausböll. The manuscript has been revised and many improvements in the English style suggested by Mr S. C. Roberts of Pembroke College, Cambridge.

C. B.

October, 1911.

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I. Danish, Scandinavian, and German popular tradition; extent of the Thunderstone belief in Europe and other Continents.

THE belief in thunderstones, which has been common at all times in Denmark, has not yet entirely disappeared. Thirty or thirty-five years ago the author found it fully alive in south-western Jutland. Amongst the recent records of Danish folk-lore we find now and again information about thunderstones, and in the earlier Danish literature, too, the prevailing ideas of the peasantry on this subject are touched on in a few places, for instance, in Holberg [72] and Pontoppidan [1]. With no very close connection with Danish popular belief, and of little importance in the study of the Danish tradition, there are, on the other hand, the "learned" expositions of J. L. Wolff and O. Worm: these are derived from foreign literary sources and originate in the ancient classical literature [115 *a*].

The substance of the Danish thunderstone belief is as follows:

The thunderstone falls down from the sky in thunderstorms or, more accurately, whenever the lightning strikes. The stroke of the lightning, according to this view, consists in the descent of the stone; the flash and the thunder-clap are mere after-effects or secondary phenomena.

The stone protects the house in which it is kept against strokes of lightning; "where it has once struck it is not worth coming again" [62]. In many parts the stone was simply kept lying on a shelf, on a chest of drawers, or in a box. Usually, however, it was kept in a particular place where it might be free from daily disturbance: it was immured in the wall, laid under the floor, on the top of the four-post bedstead, or under

the roof [138]. The object was evidently to avoid touching the thunderstone, and this is sometimes very distinctly emphasized in the records [51, 53]; thus, in Jutland it was often kept under the far side of the fixed bedstead.

The thunderstone keeps trolls and other pernicious creatures away from the house, and as most of the evils which befall man and his property are due, according to the old popular belief, to witchcraft and evil beings, the thunderstone in general becomes a protection for house and cattle; it draws luck to the house, can be used as a healing power, and so on. This idea particularly asserted itself in certain cases where an injurious influence, the origin of which was unknown, was frequently felt. Thus the thunderstone especially protects the little unchristened child against being "changed" and the horse in the stable against "nightmare." But it was especially common to use the thunderstone as a protection against mishaps with the milk and its treatment: it was laid on the milk-shelves that the milk might keep fresh or give better cream, and put on the churn that the churning might give good butter. In many parts a new, special name for the thunderstone has thus resulted: butter-luck, etc. [71].

While these ideas were spread in essentially the same form and preserved more or less perfectly all over the country, it was with particular sorts of stones that the belief was associated in particular parts of the country. Denmark has three portions of territory in touch with the neighbouring countries in the east and south, each with its special kind of thunderstone. In the greater part of the country, viz. in Sealand with the neighbouring isles, in Langeland, Funen, Bornholm (?), and in Vendsyssel, Mors and the eastern parts of Jutland, the common flint-axes of the stone age or occasionally other flint antiquities (dagger blades, even the crescent-shaped flint saws [33]) were the objects supposed to fall down from the sky in thunderstorms [1–38]. Partially in Sealand and on the islands to the south of it, Falster, Lolland and Bornholm [39–47], belemnites ("fingerstones") were regarded as thunderstones; whereas in western and southern Jutland [49–70] fossilized sea-urchins (sea-eggs, echinites) passed as such. This may also

have been the case in other districts, and if in this connection we may rely entirely on the existing records, it seems that the thunderstone belief in some places divided into two branches, so that the ideas which mainly concerned milk, churning, etc., were associated in some parts with echinites, whilst flint antiquities were looked upon as thunderstones.

The Danish thunderstones, then, have externally only one common feature, a special shape which differs from that of the common rude flint and is of fairly but not very frequent occurrence. It is not recorded that other natural stones or stone antiquities have been looked upon as thunderstones in Denmark.

The side-issues of the belief in the power of the thunderstone are, as has been said above, in the main easily intelligible from a consideration of the fundamental idea. On the other hand, this nucleus, round which the other ideas seem to have grown, demands an explanation which the Danish tradition does not of itself provide. To obtain even a probable solution, the forms which kindred popular beliefs have assumed in other countries must be taken into consideration: in this way the main facts and details, which will afford a support for the explanation, may come to light. In the first place, we must turn to the kindred peoples in the east and north, and to the neighbouring country in the south.

In Norway the thunderstone belief does not seem to have such importance as in Denmark. In the greater part of the country "certain round and smooth stones" have been looked upon as thunderstones; whereas the axes of the stone age are so regarded only in the southern part of Norway, nearest Vendsyssel. Of these only a few and for the most part brief records exist [86–89], and the derived ideas referred to above seem practically unknown.

In Iceland thunderstones are scarcely known in popular tradition, for the simple reason that thunderstorms are a rare phenomenon; consequently they have been of no importance in the realm of popular ideas and have left no trace in it. From modern times we have only scattered information about thunderstones; everything suggests that these ideas are of late origin, introduced no doubt through foreign literary channels.

If, therefore, the earliest inhabitants of the country brought the thunderstone belief with them, it must have become extinct because the natural conditions did not favour its preservation and further development [90–91].

It is quite otherwise in Sweden [81–85], where the thunderstone belief has been widely spread until the latest times. It is usually the implements of the stone age (not only the flint axe, as in Denmark, but quite as often the pierced axe) that are supposed to have come down with the thunder, though in certain parts (as in southern Skaane, close to the Danish Isles) it is the belemnite that is so regarded; in other parts the same is said about rock crystals, stones worn by water, etc. In some places the tale goes that the thunderstone, on striking, dives seven fathoms deep into the ground, afterwards rising one fathom every year until, after the lapse of seven years, it again reaches the surface—an idea that occurs in many different countries, though hardly in the Danish tradition. The power attributed to it in the affairs of daily life is partly the same as, or, at any rate, akin to, that known in Denmark: thus it is laid in the granary as a preventive against rats, and in the brewing vat to prevent the trolls from spoiling the brew; it is used against disease amongst cattle and also amongst men and women; it is hung as a charm round the neck of a child to protect it against the ague, and is placed over the horses in the stable to keep away the nightmare; it is a protection not only against lightning but also against other forms of fire; thus it is carried about "Svedjeland" (*i.e.* land cleared from forest by fire) to prevent the fire spreading; finally, it becomes a means of attracting good fortune generally, and may therefore be fastened to a fishing-net.

In Germany [93–95] we have many records of the popular belief in thunderstones in various parts of the country. Here, in the main, the same ideas occur which are known in Scandinavia, but besides these we find individual features foreign to the Danish and Swedish traditions. Some of these occur in other countries as well, but others seem peculiar to German districts. Not only flint axes, belemnites, and echinites pass for thunderstones, but also, in certain parts at any rate, pierced stone axes.

The thunderstone comes down with the lightning; it penetrates a certain depth into the earth but comes to the surface again after the lapse of a definite time; when a thunderstorm is brewing, the stone perspires and moves. It is a protection against lightning, for which purpose it is carefully kept, put up under the roof, or hung up near the fire-place. In some parts of East Prussia, where the belief is associated with the pierced axe, when a thunderstorm is coming on, the peasant puts his finger through the hole, swings the axe round three times, and then hurls it vigorously against the door—thus the house is freed from strokes of lightning. The genuine thunderstone is proof against fire. To test its genuineness a piece of thread is wound round the stone, which is then thrown into the fire; if the thread does not burn, the stone is genuine. Further, it will serve as a safeguard against witches, is put in the cradle with little children to protect them, is kept in the dairy and will cure the cattle of disease, especially the cows of inflamed udders (due to being milked by witches). It is also used as a cure for various diseases amongst human beings, partly by stroking the sore place with it, partly by scraping a powder from the stone and giving it to the sick person. These last ideas may, like the corresponding features known from Denmark, be derived from the belief that the thunderstone drives away evil creatures; in other cases the fact seems rather to be that the thunderstone, being already beneficial in so many cases, has come to be included in the motley collection of remedies employed by popular medicine; other remedies are used in conjunction with it for the same case. In an attempt, however, to find the nucleus of the thunderstone belief we must not dwell on these points, but fix our attention on the main ideas which characterise it.

Kindred beliefs, partly in exactly similar form, are found much farther abroad, not only in the Teutonic and Anglo-Saxon countries but also amongst other European peoples. We have records of this in all parts of Europe, and it appears that not only among the peoples of Indo-European origin, but also among others, *e.g.* the Ugro-Finnish peoples, the thunderstones play their part. If we turn to the other continents it becomes still clearer that this popular belief is not

limited to any one race: for the same chain of ideas is found in almost the whole of Asia and Africa, in China and Japan, as well as amongst the negroes of the Guinea Coast. The main idea, that the thunderstone comes down with the lightning, is everywhere the same; many secondary ideas attaching to it are also found in remarkably similar forms.

Thus it is over a great part of the globe that the belief in thunderstones is spread. There are, however, large districts where it is not known. This is especially the case in the South Sea Islands and in Australia, which hold also in other respects a peculiar position in the development of the human race. From America we have only a few scattered reports of a kindred belief, and there is but small probability of its being really indigenous there. The accounts most frequently appear in such a form as to suggest that the thunderstone belief, in the cases in question, was introduced by European immigrants (especially the Spanish and Portuguese in South and Central America), who brought the idea with them from their native country fully formed, and may well have applied it to the stone axes that were to be found on American soil as well as to those of their own countries. From the Spaniards and Portuguese it may have spread to the Indians. The American aborigines had usually quite different conceptions of the nature of thunder; according to a wide-spread belief, both in North and South America, it was produced by a large thunder-bird [132, 133]. Thus in the attempt to disentangle the original thunderstone belief it will be best not to consider America.

In Europe, Asia, and Africa it is most frequently prehistoric stone antiquities that pass for thunderstones; but, besides these, other stones (belemnites, echinites, globular stones and rock crystals) are similarly regarded.

This, however, does not seem to have had any particular effect upon the development of the popular belief.

II. The Thunderstone in pagan religions of the present day.

IT would help very little fully to recount at this point the traditions prevailing in various countries; for these the reader is referred to a later chapter [X] where the main portions of the existing records are given in abstract. While in the main we find the same ideas everywhere, different features are predominant in different localities. There is a special reason why our attention should be concentrated on the traditions in those parts of the world which have not been influenced by Christianity or other advanced religions. For there can be no doubt that the central features of the belief in thunderstones are not of Christian, Buddhist, Brahman or Mahometan origin, and that the old idea to some extent held its own in spite of religion, or at any rate because it was not felt to be in conflict with it. In those countries, on the other hand, which were dominated by the above religions, the power exercised by religion over the mind may have effaced certain aspects of the idea about the thunderstone which were incompatible with the faith. Among the accounts derived from distant countries two will be mentioned here which exactly illustrate this. One of them, the material for which is derived from the National Museum, is especially noteworthy, inasmuch as it has never, to the author's knowledge, been published before.

On the Guinea Coast and in its hinterland the belief in thunderstones is very common. The ancient stone axes, which are regarded as such, are called "thunderbolts," "lightning stones," "stonegods," or "thundergods," and are supposed to fall from the sky in thunderstorms. When the lightning splits a tree, kills a man, or sets fire to a house, the thunderstone is held to be the agent. As a protection against lightning it is placed

under the rafters, and sacrifice is made to it of cowries, poultry, or kids, when it is smeared with the blood of the sacrificed animals, or with milk. The Danish missionary Monrad mentions this belief in his description of the Guinea Coast [129], and makes the interesting statement that no negro dares to take a false oath when near such a thunderbolt. The belief, prevalent amongst certain African tribes, which places the thunderbolt in the hand of a personal god as an instrument of power and vengeance, seems to be of later origin.

From the opposite boundary of the great territory in which the thunderstones are known we get descriptions of a very similar character. In the mountain districts in the centre of southern India there are tribes only superficially touched by Brahmanism, amongst whom earlier religious ideas and customs still linger. From these regions we have gained much information and numerous collections in the National Museum, for which we are principally indebted to the Danish missionary, Mr Löventhal, who has worked in Vellore for many years [119 *e*].

The museum thus possesses some stone implements, mostly axes, from the Shevaroy Hills, which lie to the south-west of Madras. Some of them Mr Löventhal acquired, in exchange for other articles, from a planter in the district who is a collector of antiquities. About these axes Mr Löventhal writes as follows: "The inhabitants of the Shevaroy Hills (the Malayals, of Dravidian race, who, according to their own traditions, have migrated to the mountains from the district about Conjeveram, close to the south-west of Madras) call these axes thunderstones and believe that they have fallen from the sky. They have small stone altars in the forests where they lay these stones, and they regard them as a kind of deity." According to what the Malayals told Mr Löventhal, the planter had taken the whole of his large collection of stone axes ("whole baskets full") from their altars. From the same mountains there are seven stone axes sent to the museum by Mr Berg, a missionary, who describes them as follows: "The thunderbolts were worshipped as village gods in these mountains; they were presented to me, while on a preaching tour, by the inhabitants, who are called Malayals,

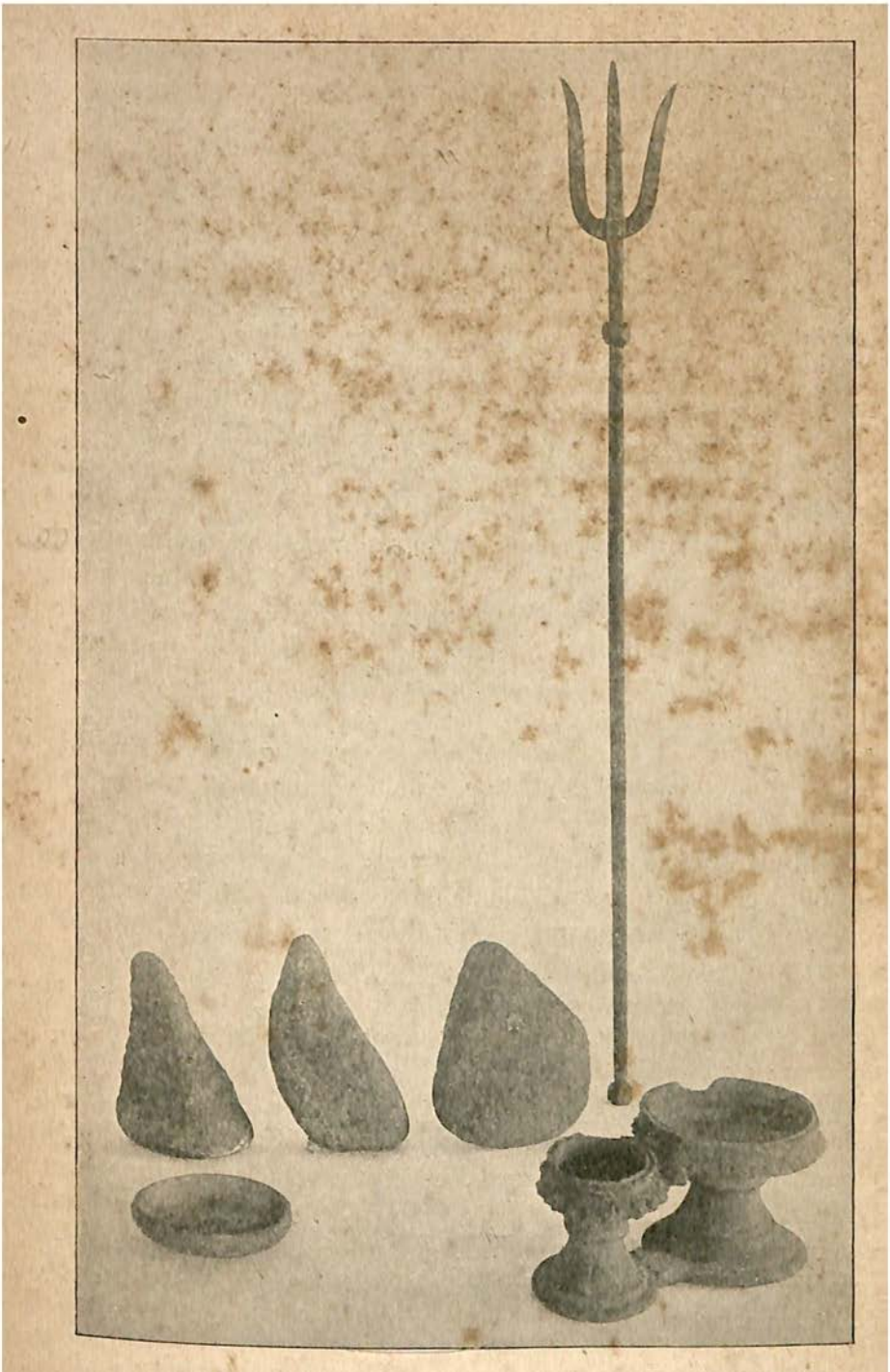

Fig. 1.

i.e. 'mountain men.' These bolts were placed in a row on an altar just at the entrance to the village. The altar was as high as an ordinary table. It was built of stones, on the top of which earth was laid, with the bolts stuck in it. They were all smeared with ghee (Indian butter)."

From a pariah altar in the neighbourhood of Vellore comes the whole of the set of cult-objects belonging to the National Museum which is shown in fig. 1. Of this Mr Löventhal writes: "Somewhere in the centre of all the pariah villages I have seen, there is a square mound of earth, each side of which measures from 12 to 16 feet, the whole being surrounded by stones; in the middle of this eminence—the 'earth-temple' as they call it—there generally stands a large tree. Close to this tree three pointed stones (in some cases five, or in others only one) are generally put on end and fixed in the clay, sometimes with a little mortar. The shape of these stones, which may differ much in size, should, if possible, resemble that of a somewhat flattened cone, and if the pariahs can find natural stones of this shape, they much prefer it; otherwise they work them roughly into the required form. When worshipping they smear these stones with saffron and make three red aniline dots on each stone with their fingers. These are soon washed off by the rain, or obliterated by the sun and hot wind, and as the pariahs are not as a rule very punctilious in their worship, the stones are most frequently seen without them. A small *trisula*[1] is stuck into the earth next to the stones, and in front of them is placed an earthenware bowl with a wick inside for oil, and a double bowl for camphor, which is commonly used as incense. But both the earthenware bowls and the trisula are often missing; children play with them and break the bowls, but when the time comes for the stones to be smeared, the bowls and trisula must be found again and put in their places; otherwise fresh ones must be bought."

The photograph here reproduced of one of these "earth-temples" (fig. 2) has been procured by the kind help of Mr Löventhal. It stands in the middle of the only street in

[1] A small three-pronged fork of iron. For its significance and origin see Chap. VII.

a pariah quarter belonging to the village of Agrāvaram (2½ miles south of Vellore) and is close to the latter and south-east of it. The actual altar is 2½ feet high, its surface 7½ × 9½ feet. On the altar are seen seven thunderstones, all natural stones, and also the same cult-objects as are shown in fig. 1. The trisula owes its white colour to the remains of the holy ashes (burnt cow-dung), of which something has been left from the last occasion of worship.

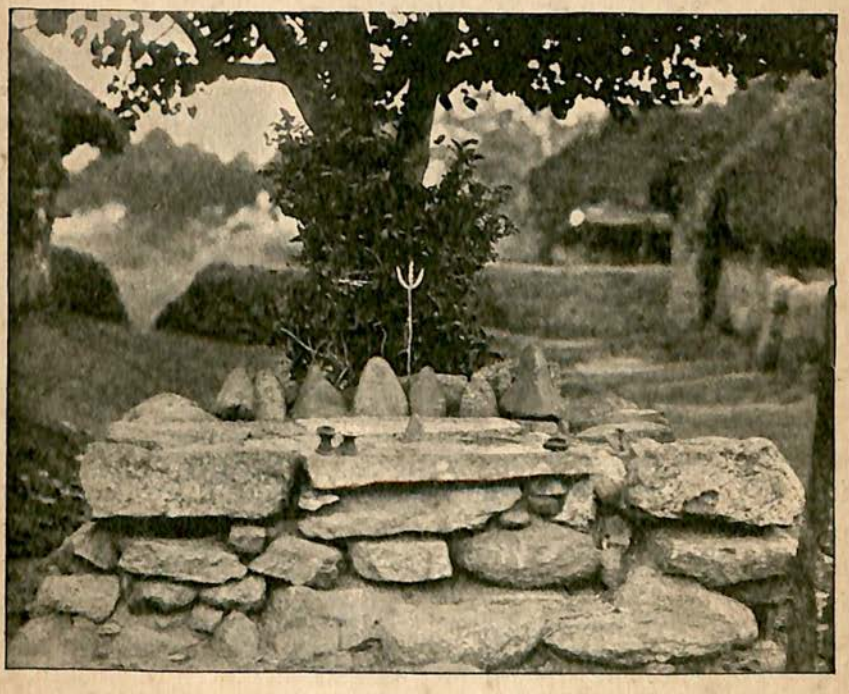

Fig. 2.

From another earth-temple in a pariah village some boys brought Mr Löventhal a set of stones, of which two were old stone axes, while the third was a tapering stone of another kind (see fig. 3). This led him to think that the other pointed stones from the pariah altars were only substitutes for stone axes, which are of much rarer occurrence in the lowlands than in the mountains. "I am confirmed," he says, "in this idea by the fact that in all the villages in the Shevaroy Hills, where

the planter had removed stone axes from the altars, the inhabitants had replaced them either by natural stones or by stone fragments which bore a fair resemblance in shape to such axes."

In these traditions of the negroes of western Africa and the Dravidian peoples of southern India we have found an element which is wanting in the European traditions so far as we have

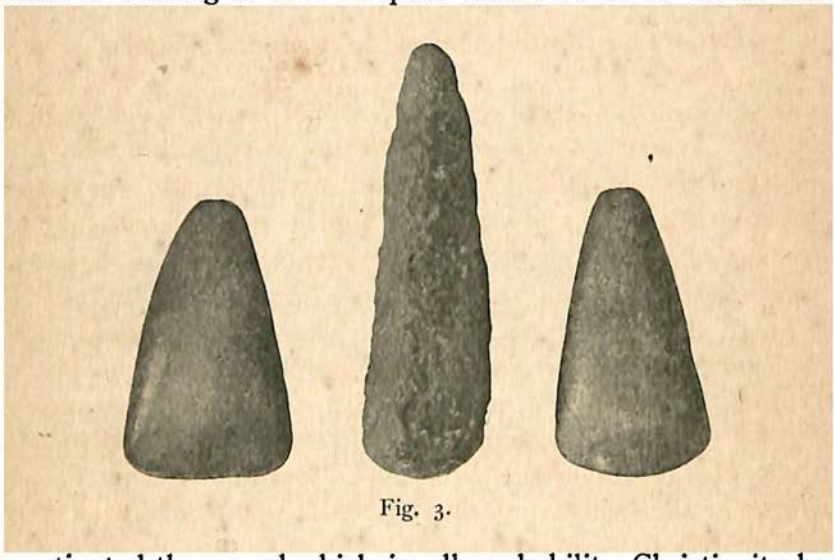

Fig. 3.

investigated them, and which in all probability Christianity has eliminated. The actual thunderstones are looked upon as gods, are called gods, and are worshipped with sacrifices. When it is said of the negroes on the Guinea Coast that they dare not take a false oath near a thunderstone, there is the same underlying thought: the stone is a god with a power to punish.

III. The Thunderstone in Ancient Greece.

IT is probable that a popular belief which is so widely spread is a very ancient one; and there can hardly be any doubt that the idea of the thunderstone was spread from people to people over the many lands in which it appears, and did not arise spontaneously in different countries in such consistent forms and with so many features in common.

But if the belief is an old one, it would indeed be singular if it could not be traced to ancient sources, or if it had not at any rate left its mark upon what are undoubtedly ancient religious ideas. And such is, in fact, the case. It is of little significance that thunderstones and a certain number of the features of the beliefs described above are occasionally referred to in mediæval literature; but in ancient Greece we meet with traditions that are fully intelligible only when seen against the background of the thunderstone belief.

Near Gythion, in Laconia, in the early ages there was an unwrought stone (Pausanias, III. 22, 1) which, in the dialect of the district, was called Zeus Kappotas. In a later age the word was not rightly understood; Pausanias by a false etymology connected it with a legend about Orestes, who is said to have sat upon the stone and so to have been purified from the consequences of his matricide (the same legend is associated with a stone in Troizen: Paus. II. 31, 4). Sam Wide (in his *Lakonische Kulte*, pp. 20 *seq.*) has, however, convincingly explained it as "Zeus fallen (from the heavens)," *i.e.* the lightning. The stone had not been a stone axe or any small stone of a similar kind, as it is expressly stated that Orestes sat down upon it. It had more probably been a meteor, for in modern times meteors have in several places been looked upon as thunderstones

[107, 108]. In various parts of Greece places that had been struck by lightning were enclosed, and it was forbidden to set foot upon them; they were shown by an inscription to be consecrated to the "descending Zeus" [115 *e*]. The consecration of the place was said to be due to the idea that the god who had come down from the heavens had himself chosen it for his abode; but originally, no doubt, there was also the underlying feeling that it was dangerous to set foot upon the spot. Human beings who had been struck by lightning were similarly sanctified, *i.e.* it was forbidden to touch them; the body was not to be treated like other dead bodies, and, in particular, was not to be burnt, but simply covered with earth in the place where it had been found. Even if these customs were not in historical times associated with a stone fallen from the sky, still the idea evidently preserved in them is that a god descends to the earth in the form of lightning; this belief, as has been said already, is an essential part of the group of ideas under consideration. Sam Wide has collected some of the traditions on the subject, but they are more fully treated by Usener in his essay on the "Keraunos" (*Rhein. Mus.* 1905, pp. 1–30), in which a large part of the material derived from Greece and Italy is brought together.

Usener, in his analysis of the ideas which were associated with lightning in Greek religion, draws a distinction between three phases of the cult.

1. The lightning is worshipped in each separate case as a god that has descended from heaven to earth (*Augenblicksgott*).

2. The lightning is worshipped as a particular god whose activity is restricted to thunder and lightning (*Sondergott*).

3. The lightning is transferred to Zeus as part of the activity of the God of the Heavens (Zeus Kerauṇios, etc.).

These three phases, according to Usener, represent three successive stages in the evolution of the cult; the later ideas, however, did not entirely obliterate the earlier ones, of which many evident traces remained in various places, especially in the cults of remote districts. Thus Usener assumes that the worship of the lightning itself as a god was preserved in Macedonia, whence it was transferred to the Hellenistic countries of Asia. That the lightning was worshipped as a god in several of the Greek or

semi-Greek cities of Asia is quite evident; it is shown very clearly by the coins given by Usener in his *Götternamen*, p. 286, and by other evidence from Seleukeia Pieria in Syria and Diokaisareia in Cilicia. Whether it was really an ancient Macedonian cult which was introduced here is more doubtful. It seems more natural to suppose, especially when the other evidence of lightning-worship in this and neighbouring districts is considered, that it is a local tradition called forth to new life under fresh political and religious conditions. The worship of the classical Greek thunderweapon placed on an altar or throne (see fig. 4) has indeed the appearance of being the Hellenized form of an older and more primitive cult (cf. pp. 26 and 46) similar to the worship of stone axes on an altar in southern India, as described above, or to the worship of bronze axes in Mycenæan Greece and Asia Minor, to which reference will shortly be made.

Fig. 4.

The classical Greek thunderweapon (*keraunos*) which represents the lightning in this cult is practically the only figure used to express the lightning in ancient Greece and Italy in historical times (see Chap. VI). Yet the more primitive notion of the thunderstone has survived on Greek soil even up to the present day. A stroke of lightning is in modern Greek called *astropelěki* (sky-axe), and the same word is used as the popular name for the small axes of the stone age which are occasionally found. The modern Greek name and the idea attaching to it have also come down to us in mediæval Byzantine literature [114].

Though the thunderstone belief scarcely appears in either the religion, the art, or the literature of classical Greece, still we must suppose it to have lingered on secretly, amongst certain classes, or in certain districts, throughout the whole of the early periods of history. How often, indeed, is the thunderstone mentioned in the whole of the Danish literature of the eighteenth and nineteenth centuries, in spite of the fact that the whole peasantry believed every stroke of lightning to be due to such

a stone? That the inhabitants of classical Greece really regarded the stone axes as thunderstones is quite evident from the tradition of "ceraunia," which Pliny has quoted from a Greek author, Sotacus [115*a*]. From Pliny this quotation passed into the books written on the subject of stones in the later days of the ancient world and in the Middle Ages. It reappears, moreover, as late as the sixteenth and seventeenth centuries, when polymathic authors produced a pseudo-scientific

Fig. 5 A.

Fig. 5 B.

theory of the origin of lightning phenomena, of the formation of thunderstones, and so forth. This literary tradition, which has but slight connection with the popular belief examined here, and which has seldom got further than the four walls of a study, need not be discussed in detail, especially as it has recently been fully treated elsewhere [115*a*]. Traced to its source in Greek literature, however, it may show that popular belief in ancient Greece associated the stone axe with the idea of the descent of a stone from the sky accompanied by lightning.

But it is not only from Pliny that we have evidence of

this form of the Greek thunderstone belief. Several prehistoric stone axes have been preserved which at a later date were engraved with figures and inscriptions to act as charms [115*b*], the reason being that they were looked upon as thunderstones.

A remarkable discovery of this nature was brought to light during the excavations at Pergamon; three flat stone slabs sawn out of prehistoric stone axes, with similar inscriptions engraved on both sides, were found together with other objects, evidently forming a complete apparatus of magic. As the pictures which have hitherto appeared of them have chiefly aimed at showing the inscriptions, one of these objects is depicted in figs. 5 A and 5 B, showing the original rounded exterior of the stone axe; on the back is seen the even surface produced by the axe being sawn through; at the top is a hole for a string, by means of which the axe could be worn as an amulet. A much older amulet of a similar kind, which has at least been shaped by a Greek hand, was part of the discovery made at Vettersfelde [115*b*], viz. the small stone axe set in gold shown in fig. 6. The discovery was made in Germany, and the stone axe has perhaps, as Furtwängler supposes, been worn by a Scythian chief. But its gold setting is of the same kind as the other gold work in the discovery, and must be regarded as Ionian Greek work of the sixth century B.C. The stone axe itself, as far as it can be examined, seems most to resemble some of the axes of Asia Minor in the collection at Smyrna; as, however, the author has no knowledge from personal observation of the stone implements of South Russia, it is possible that it may come from those districts to which Furtwängler assigns the discovery in its entirety.

Fig. 6.

The ideas, however, to which these discoveries and literary references bear witness can be traced back to still earlier periods of Greek history. The excavations of Mr Evans at Knossos in Crete have brought to light especially valuable evidence from the Mycenæan period of the worship of the double-axe as a holy being (discussed by KARO in *Archiv für Religionswissenschaft*,

VII. pp. 117–156). Most remarkable is an altar (see fig. 7

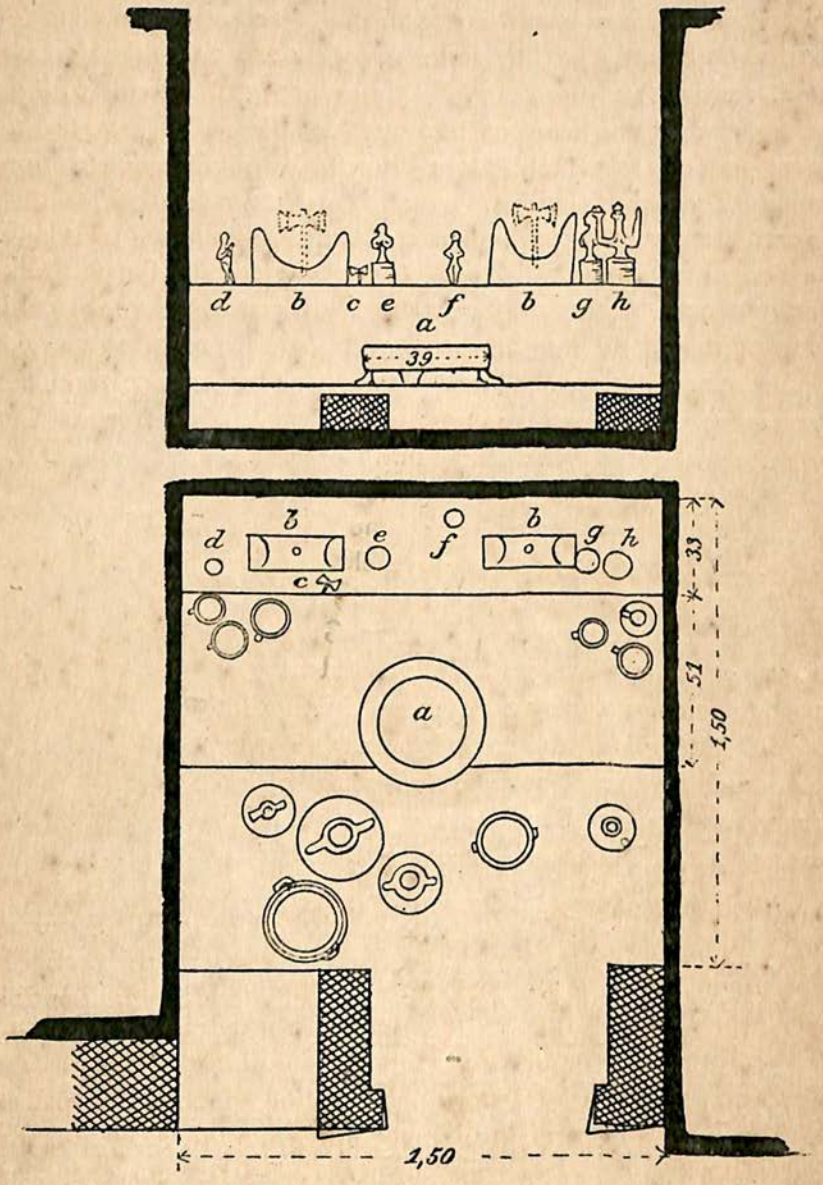

Fig. 7.

and EVANS, *The Palace of Knossos*, 1902, pp. 96 *seq.*), copiously furnished with various cult-objects, which were found intact as

they had stood when the inhabitants of the palace left the sanctuary: on the altar are two stands for double-axes (*b*), a small double-axe of steatite (*c*), and five terra-cotta figures (*d–h*); on the floor and the low eminence in front of the altar are various sacrificial vessels and a low tripod (*a*). There can be no doubt that the whole of the little sanctuary was made for the sake of the two double-axes; they were the objects to which worship and sacrifices were paid. This is possibly the reason why the axes alone are missing and everything else is untouched; there may have been an endeavour to save the most sacred objects. Otherwise, as Mr Evans surmises (*l.c.* p. 101), the value of the metal may have been the reason for their removal.

Fig. 8.

Many points go to prove that the double-axe is a representation of the lightning (see USENER, p. 20). The worship of it was kept up in Tenedos and in several cities in the south-west of Asia Minor, and it appears in later historical times in the cult of the thundergod of Asia Minor (Zeus Labrayndeus). An impression from a seal-stone shows the double-axe placed together with a zigzag line, which represents the flash of lightning (EVANS, *Knossos*, 1902, p. 107, fig. 65). On the large gold ring from Mycenæ (fig. 8) is seen an assembly of women, and in the air above them are depicted the chief heavenly phenomena, the sun, the moon, a double curved line presumably representing the rainbow, and the double-axe, *i.e.* the lightning.

The latter is placed lower than the others, probably because it descends from heaven to earth. Sun, moon, and lightning are similarly placed together in Babylonian representations where they correspond to the trinity of Shamash, Sin, and Adad.

The explanation given here makes it clear why the double-axe as a cult-object on the altar of Knossos was found not in single but in double form, and why we frequently find elsewhere instances of a number of axe-pictures placed together (*e.g.* in the seal impression in EVANS, *Knossos*, 1902, p. 103, fig. 61). The symbol of lightning or the thunderweapon occurs, indeed, often repeated twice or several times in the art and in the religion of widely differing peoples [143]: just as in a thunderstorm one flash follows upon another, so the number of the primitive lightning gods was in itself without end. But where a representation of them was to be used as an object of worship or as an amulet, practical reasons made a definite small number necessary (cf. pp. 10 *seq.*).

Next to the altar at Knossos the figures on the painted sarcophagus from Hagia Triada in Crete, which dates from the same period, give the fullest and most important evidence of the worship of the double-axe in the Mycenæan age (see PARIBENI, in *Monumenti antichi dell' accademia dei Lincei*, XIX. punt. 1, pll. 1–3; V. DUHN, *Archiv für Religionswissenschaft*, XII. p. 161, pll. 2–4). Here only a few comments will be made on that scene of worship on the sarcophagus which has special reference to the present subject; by way of illustration part of plate 1 of the above-mentioned volume of *Monumenti antichi* is reproduced (fig. 9). The zincograph, however, gives no idea of the wealth of colour in the original[1]. About the details of the scene, and its connection with others on the sarcophagus,

[1] In order to give some idea of the polychromy, the following information is appended. The double-axes are yellow with black stripes, the birds yellow with black spots (originally all black?), the pillars green, their pedestals red and white with dark red oblique lines, the standing vase blue with narrow yellow bands, the vase from which the drink offering (a red stripe: wine or blood?) is poured in it blue with red stripes. The dress of the woman in front is chiefly white with blue braces and band; the woman carrying pails has a dress of blue with black, red, and yellow stripes. The lyre-player, whose tanned complexion shows that he is a man, has a reddish dress with black and white stripes; the lyre is yellow and its strings red.

information must be sought in the original publication with its excellent reproductions of Stefani's watercolours.

The double-axes, to which sacrifice is being made to the accompaniment of the lyre, are placed on pillars encircled with foliage, probably a ritual representation of the trees struck by lightning [98, 124], the trees, that is, upon which the lightning god descended. On the axes are birds, and the surmise that they also may have some connection with the lightning can hardly

Fig. 9.

be rejected (cf. p. 61); but a zoological definition of the birds, which have already been declared by different authorities to be eagles, pigeons, woodpeckers or ravens (see PARIBENI, p. 31; v. DUHN, p. 166), can hardly be given with certainty, and cannot therefore be used as a starting-point for further conjectures. The axes have a doubled edge on both sides, a characteristic which they have in common with many other representations of sacred axes (cf. fig. 8), but which is of course never found on axes that have been in actual use. Paribeni (p. 31) regards these axes as a kind of perspective rendering of axe-blades set

crosswise with edges pointing to the four corners of the earth. That these doubled edges fit in well with the theory of the axes as thunderweapons is clear[1]. It is the same with the ornamental oblique lines on the axe-blades, which often occur on sacred axes, but never on actual tools (see EVANS, *Palace of Knossos*, 1901, p. 52). They are hardly a meaningless decoration, but may well indicate the flash of lightning; on one particularly well-drawn picture of such a double-axe there is a zigzag line between the sloping lines (EVANS, *Palace of Knossos*, 1901, fig. 15 *a*; cf. *ib.* 1902, p. 107, fig. 65).

On the altar of Knossos the double-axes (*i.e.* lightning gods) were worshipped as the protecting deities of the house, as indeed the thunderstone was regarded all over the world, and in certain parts of historical Greece, at any rate, the lightning god as well (cf. MARTIN P. NILSSON in *Hermes*, 1908, p. 315). The scene of worship on the sarcophagus is assumed (probably quite rightly) to be connected with worship of the dead. What is taking place is possibly only an invocation of the lightning god as the deity with the greatest power to protect the grave and to secure the peace of the dead. Parallels can be quoted from various places (Thor consecrates the funeral pile; Thor's hammer is found on tombstones, etc.); but it is possible that the lightning god who darts down to earth has also become the special protector of the dead abiding in the earth; to this also we have parallels (cf. Chap. X. 96 *b*; USENER, *Rhein. Mus.* 1905, p. 12, and generally, *Zeus Katachthonios*).

From details in coin-pictures from places where the double-axe was still worshipped in historical times, it may be seen that the sacred axe was an actual bronze axe of the Mycenæan period (cf. BLINKENBERG, *Archæol. Studien*, p. 46). But there can hardly be any doubt that the bronze axe in this cult has superseded the earlier stone axe. A Mycenæan grave-find from Phaistos [115 *b*] contained one of the usual small Greek axes

[1] Corresponding developments have occurred in many places: the Assyrian thunderweapon is formed by a doubling of the edged part of the Babylonian trident so that the weapon becomes active in both directions. The power of the classical keraunos is further developed by the addition of several edges, arrowheads, etc. The vajra of Indra has 1000 points and 100 edges [119 *a*].

of the stone age, pierced in order to be worn as an amulet (see fig. 10). Exact parallels to this are found, as will be seen in the course of this study [139], belonging to various periods and places, but all developments of the common thunderstone belief. The custom of wearing the actual thunderstone as a charm has spread practically wherever the thunderstone belief prevails, just as images of the thunderweapon are worn where a personal thundergod is worshipped.

Fig. 10.

The Phaistos find is evidently to be explained in the same way: here, too, the stone axe was worn as an amulet because it was regarded as a thunderstone. Doubtless it was with the stone and not the metal axe that the idea of a body darting down with the lightning was first associated, just as it has always been associated throughout the greater part of the large area in which it is known. In this form the popular belief may be naturally and easily explained, as will be shown later; otherwise, if the belief in the stone axe had not existed, it is not clear how the idea of representing lightning by a bronze axe could have been arrived at. According, then, to the view here maintained the process was as follows: during the development of culture in the Greek bronze age, when the primitive stone axe was replaced by the more perfect implement, the double-axe of bronze, the same change was taking place within the sphere of religion. The priestly adherence to what was ancient and inherited, which, though unable to prevent new developments, plays so conspicuous a part in the religions of historical times, would hardly at that time have been so powerful a factor as to hinder the natural and intelligible process by which the primitive stone axe, which was worshipped on the altar, was superseded by a metal axe[1]. How far the transition from the worship of the impersonal lightning to the cult of a personal god assisted in this process will not be considered here.

That the evolution has taken place in this way is confirmed

[1] A remarkable parallel to this is found in modern popular belief in France where, in certain parts, an iron axe as a protection against lightning has supplanted the usual stone axe [110*a*]. Cf. p. 56.

by a parallel which, as far as can be ascertained, goes back to the same period and is a result of the same movement. The double-axe of bronze belongs to the Mycenæan sphere of culture and to the western part of Asia Minor. In the regions a little farther to the east and south, the eastern part of Asia Minor, Assyria, and northern Syria, instead of the double-axe, we find the single-edged, pierced axe as the chief implement of the bronze age. In the same parts, chiefly the regions of the

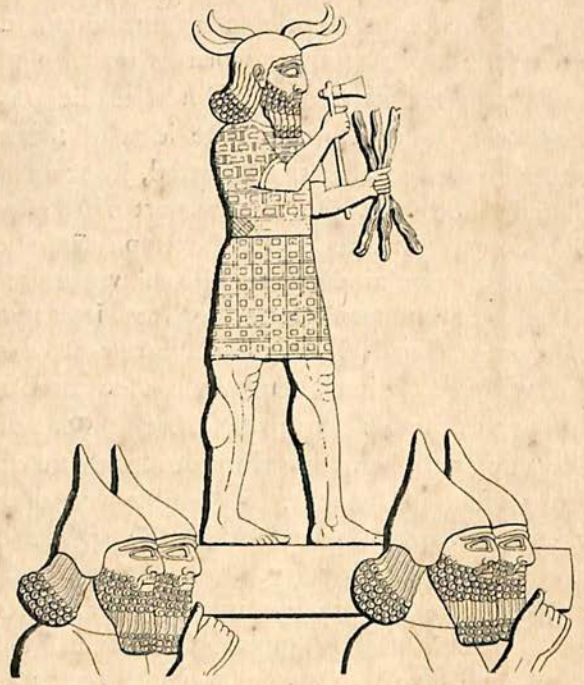

Fig. 11.

Hittites and Assyrians, the local thundergod (Adad), according to pictorial representations of a somewhat later period, wields the single-edged axe. In fig. 11 the well-known relief from Nimrud is reproduced, representing the statue of the thundergod carried by Assurbanipal's soldiers (cf. PERROT, *Histoire de l'art*, II. p. 76). Among corresponding Hittite representations found during the later excavations, a relief from Sendschirli may be

mentioned (fig. 12; *Ausgrabungen in Sendschirli*, III. p. 218, pl. 41 and fig. 114; cf. *Mitteil. der vorderasiat. Gesellsch.* 1900, pl. 1, 6), as well as a stele from Babylon with a Hittite inscription and relief (*Wissenschaftl. Veröffentl. der deutschen Orient-Gesellschaft*, 1900, Heft 1; cf. *Mitteil.*, as above, pl. 1, 5). The latter object was brought as booty to Babylon 730 B.C., as it was customary for

Fig. 12.

the victor to carry the idols of the subjugated cities away with him to his own capital. It is hardly possible to determine the date of the Hittite representation more accurately. That it dates back to a fairly ancient time may, however, be inferred from the fact that it was found on the old Babylonian cylinders. A copy of such a cylinder, which is kept in the collection of classical

antiquities at the National Museum, is depicted in fig. 13. The inscription, according to the information kindly supplied by Professor Bruno Meissner of Breslau, contains only the names of Shamash and Ai, *i.e.* the sun-god and his wife, and so has no nearer connection with the engraved figures. In a well-known picture of a scene of sacrifice found on a cylinder (*Revue archéol.* 1887, II. p. 269) a club and a one-edged axe are seen placed on a throne, and to these a fish is being sacrificed. A comparison with religious pictures of a kindred nature (W. J. HINKE, *A New Boundary Stone of Nebuchadrezzar*, I. pp. 88–89) shows that the axe represents the lightning or the god of lightning.

Fig. 13.

Provided that the old belief, according to which the lightning was produced by means of a stone axe, was predominant in the Hittite and Assyrian regions[1], as well as in those parts where Mycenæan culture prevailed, it becomes intelligible how during the bronze age, by a parallel development in the two districts, the old thunderweapon was replaced by the bronze axe in the two distinct forms which appear in the two regions respectively. Without this assumption it would be difficult to find an explanation. If one district had merely borrowed from its neighbour we might have expected to find a complete similarity; either the Hittite and Assyrian regions would have adopted the double-axe, or the Mycenæan would have taken over the one-edged Asiatic axe.

After the thunderweapon had thus passed, by a natural evolution, from its primitive form into a bronze axe in the Greek and western Asiatic world, in some parts of these countries, as has already been said, this bronze form was preserved by hieratic tradition throughout the early ages. It must certainly have been with this form that the myth which relates how the Kyklopes made the lightning for Zeus was originally associated.

[1] It was from some of the cities of this very district that the Hellenistic worship of the keraunos was transmitted. This too we must suppose to have been a later successor of the primitive thunderweapon, the stone axe. (See p. 15.)

The classical Greek thunderweapon, which will be discussed in a later chapter, cannot, in view of its nature and date, be taken into account. The double-axe, on the contrary, has the first claim to consideration. It was certainly of the same shape as man's own implement, but when placed in the hands of the gods it was necessary that it should have been made by supernatural beings, fire demons, who cast or forged it and endowed it with supernatural power. This idea is mentioned in Hesiod's *Theogony* (*vv.* 140 and 501 *seq.*). Similar legends are told of Thor's *mjölnir*, forged by the dwarfs, and Indra's *vajra*, made by Tvashtar. The ancient popular belief about the thunderstone, on the other hand, does not show any corresponding features. The thunderstone explains itself to the mind of the people as a natural phenomenon, but the metal weapon requires a special myth: only a supernatural origin will raise it above the tools of men and supply a reason for its dreadful power.

IV. The Thunderstone in ancient Italian religion and folk-lore.

In the religion of the Romans we similarly meet with survivals which suggest that the idea of the thunderstone prevailed in early ages, just as at the present day it is spread throughout the whole of the Italian peasantry. Here the stone antiquities everywhere pass for thunderstones [113], and are used very commonly as amulets, especially against the injurious influence ascribed by popular belief to the evil eye. The tenacity with which ideas of this kind have prevailed through all the religious and other changes which the country has undergone, is seen by

Fig. 14.

Fig. 15.

comparing the arrowheads set in gold found in the old Etruscan tombs [115 *b*] with those made for the Italian peasant of to-day out of the arrowheads he finds in the fields; except in a few unimportant details the resemblance is exact. Two specimens, of Etruscan origin dating from the 5th century B.C., are shown in full size in figs. 14 and 15. The first is covered with an ornamental gold setting of fine workmanship in such a way that only the extreme point of the arrowhead is visible. The larger

one (fig. 15) has a silver mount of a simpler form, now highly oxidized. By means of the examples preserved, the use of such amulets may be traced back as far as the beginning of the iron age, about 1000 years B.C. [115 *b*]. Stone axes, also, were pierced and worn on necklaces even in prehistoric Italy; a fine specimen of this kind from a grave in the Faliscan district is reproduced in fig. 16. It is natural to compare it with the stone axe from Phaistos, shown in fig. 10, the conditions being on the whole the

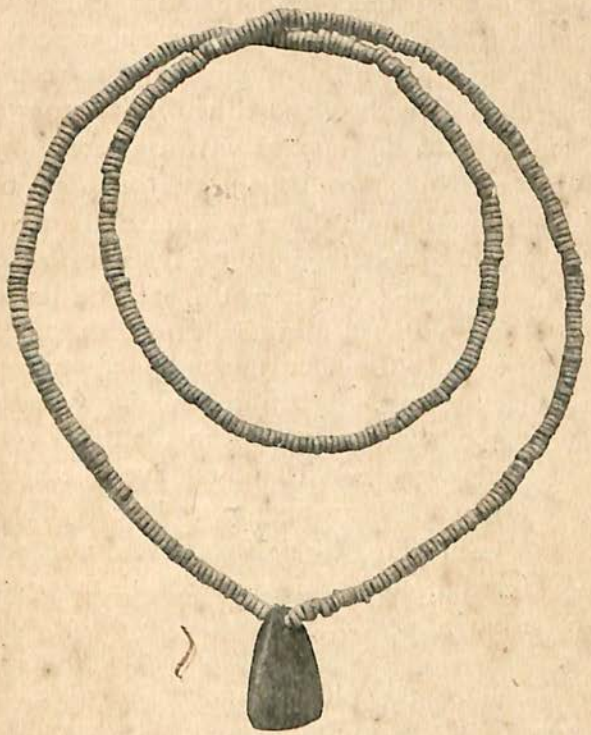

Fig. 16.

same in ancient Italy as in Greece—only in Italy the arrowhead thunderstones are more prominent.

That the belief in the thunderstone existed in ancient Rome in the same form in which we now know it in modern Italy, is further seen from one of the stories told about the insanity of the emperor Caligula. Caligula allowed himself to be called Juppiter, and entered on a regular trial of strength with the Lord of Heaven: against the thunder and lightning of the heavens he

set the noise and sparks of a mechanical apparatus, and to each stroke of lightning he responded by throwing a stone, adding, "Come on" [115 *c*].

The measures prescribed by the Etruscan fulgural ritual and, in accordance with it, by the established religion of Rome in cases where a public place (*locus publicus*) had been struck by lightning, were simply an embodiment of the popular ideas in a practical religious form [115 *d*]. The remains of the lightning, particularly the actual thunderstone, which was supposed to penetrate as deep as five feet into the earth, were sought out. Both the place struck by the lightning and the remains themselves were held to be sacred, and to violate them by a profane touch was forbidden; the remains were collected and buried; the place was surrounded by a parapet (*puteal, bidental*) and marked with an inscription (*fulgur conditum*) to show that the lightning had been buried there. The inscription was placed either on a simple stone slab or on the actual altar which was built to receive the prescribed offerings: for diurnal lightnings (*fulgur diium*) white sheep, for nocturnal lightnings (*fulgur summanum*) black sheep. When a building was struck by lightning, an opening had to be kept in the roof over the spot, so that the lightning god could always have free access to the place he had chosen for his sanctuary[1]. The bodies of human beings who had been killed by lightning were not to be burnt; they too were sacred through their contact with the lightning god, and were to be buried in the earth like any other object struck by lightning.

In Rome one of the oldest sanctuaries, which according to legend was founded by Romulus, was the small temple to Juppiter Feretrius on the Capitol where the god was also worshipped under the name of *Juppiter Lapis* (*i.e.* Juppiter in the guise of a stone). In this place was kept a cult-object which is referred to in literature by the name of *lapis, lapis silex* or *saxum silex* [115 *f*]. A passage in Livy (XXX. 43, 9) shows that there were several such stones in the temple, as the other references also seem to indicate; as a parallel to this we may recall the fact that on the Indian and Knossian altars more than one

[1] See USENER, *Rhein. Mus.* 1905, p. 8, note 4.

cult-object representing the lightning was found. The shape of the sacred stone (or stones) is nowhere very accurately described; an omission which has caused the majority of modern scholars to look upon it either as an implement of the stone age, or as an unwrought flint stone, but this has no particular importance in the present connection. From the information we have concerning the use of it, it is quite evident that it was looked upon as a thunderstone, and that the deity itself was thought to be present in it. Here again we see an element of the old thunderstone belief adopted and put to practical use in the established religion of Rome: the most solemn oath was that sworn in the name of *Juppiter Lapis*, just as in West Africa (as previously described) an oath taken near the thunderstone is still considered inviolable; in other parts of the world, too, popular expressions preserve traces of the old custom of swearing the most solemn oaths by the thunderstone or the thundergod [144]. The sacred stone was used in Rome when the *fetiales* took the oath and made sacrifice upon the formation of an alliance with a foreign power. Such an alliance, according to the Roman view, received its highest sanction from the lightning god himself[1]. The priest, pronouncing a curse on the contractor who should first violate the sacred compact, hurled the stone at the sacrificial animal ("Juppiter, smite the Romans as I now smite this sacrificial swine, and smite them more heavily for thy power is greater than mine"). It is evident that this action is a representation in ritual form of the stroke of lightning, and is of the same kind as that which the Masurian peasant performs to this day when, during a thunderstorm, he hurls his stone axe in a definitely prescribed manner against the door to protect his house against lightning. The same idea must also be responsible for other traditions which relate how the priest throws the sacred stone on the ground.

[1] VERGIL; *Æn.* XII. 200: Audiat hæc genitor, qui fœdera fulmine sancit.

V. The original form and age of the ideas.

THE various instances which have been adduced from the religions of ancient times and foreign peoples, and from the popular beliefs and customs of ancient and modern Europe, are without doubt survivals of a connected chain of ideas concerning the lightning which were formed in the early days of the history of mankind. We shall now endeavour to reconstruct this chain of ideas, when it will be seen that the scattered links may be joined to form a natural and continuous whole. It is, of course, impossible to arrive at an absolutely certain conclusion. The attempt at reconstruction holds good for Europe, but it is quite probable that similar ideas were spread over Asia and Africa at just as early, if not at an earlier, date.

The lightning, then, is produced by a stone which shoots down from heaven to earth. It splits trees, kills men and beasts, and penetrates deep into the ground. Then in course of time it moves upwards, and will eventually be found lying on the ground. (According to the popular idea the stones are conceived sometimes as growing in the earth, sometimes as simply moving upwards.) Further, the thunderstone in descending produces the violent clap and the devouring fire. So far the ideas are of a physical rather than of a religious nature. But physics and theology were not clearly differentiated in the mind of primitive man, and with these physical ideas others, which we should call religious, were closely linked. The stone which descends from the sky is a powerful god. Nor is it regarded as lifeless after its fall; the divine power is still alive within it. Thus the thunderstone is placed on an altar and worshipped with sacrifices, or at any rate is kept in a safe and secret place. The spot on which it has fallen is regarded as having been chosen by

the god for his abode, and therefore as being holy ground is not to be violated by the foot of man or beast. Similarly the tree split, or the man killed by lightning, is sacred, and must not be treated as other trees or other corpses. In short, the stone itself and everything it has touched are taboo. The reason for this taboo is clear: the dangerous forces remain in the stone after its descent[1]. The thunderstone, *i.e.* the thundergod, moves when a fresh storm is brewing; by its mere presence it protects against further strokes of lightning the house that has given it shelter[2]; still it is thought good at the approach of a storm to make it clear that the thundergod has already chosen the house for his abode. Hence a ritual imitation of the stroke is performed by hurling the thunderstone against the door. The thundergod is moreover regarded as the most powerful of all the gods of heaven and earth, since the effects of his anger are so terrible and so evident. Consequently the most solemn oaths, which no man will dare to break, are those sworn by the thunderstone. Further, as the most powerful of the gods, the thundergod drives away all evil spirits which may harm a man by witchcraft or other means. This aspect of the belief, being the most serviceable in the affairs of daily life, is naturally the one most frequently kept in view. The diseases and misfortunes which befall man and his property are mainly due, according to the popular belief, to the machinations of evil beings. Under this head are reckoned, amongst other calamities, fits of mental derangement caused by demoniacal possession. It is the thunderstone therefore that is used to cure insanity. Among cattle-rearing peoples, the power of the stone to protect their cattle is especially emphasized. The thunderstone is, in particular, a protection against all the mishaps that

[1] See *e.g.* under Portugal [112]; the people of Assam made a distinction between *living* and *dead* thunderstones [121]; a blow from a thunderstone was in many places regarded as absolutely fatal [136]. The primitive idea of taboo is at the root of the Greek and Roman custom of enclosing places struck by lightning, and of that terror of the thunderstone still felt in certain places [137]. A trace of the same idea is preserved in the Danish custom of putting the thunderstone in a place "where no one can set foot" [51], and generally in the custom of keeping it in remote and out-of-the-way places [134].

[2] The converse of the idea, that the thunderstone attracts a storm, is also met with in certain parts [113, 133].

may befall the milk, in the milking, churning, and so on, because such misfortunes are thought to be due to sorcery. By virtue of the latter qualities, the thunderstone becomes part of the stock-in-trade of the popular art of healing, and it is certainly impossible in all cases to determine whether the use of the stone as a means of curing disease arises directly out of its own inherent qualities, or is due to a confusion with popular therapeutic ideas of a different origin.

The central features of this whole group of ideas, both those which we should describe as religious and those which appear rather to be physical, seem, as far as can be ascertained, to bear a purely primitive stamp. The nature of the ideas themselves gives strong support to the view that they originated at a very early period; it is natural therefore that in historical times only scattered survivals should be found in ancient Greece and Italy, and that, moreover, the cult of the Mycenæan period already presents a derived and remodelled form of the thunderstone belief. Everything in fact suggests that the thunderstone belief dates back to the stone age, and probably to an early phase of the stone age. If this view be correct, ideas that remain fully alive in Europe to-day contain some of the oldest mythical matter actually known.

If it be asked whether a reasonable explanation of the origin of the idea can be given, the answer is not far to seek if this theory of its age be accepted: the people of the stone age would make observations of the effects of the lightning and its accompanying phenomena, and compare them with their own experience in the use of their most important tool, the stone axe; it was with this that the tree was split; it produced a crash, and sparks flashed when it met a hard substance. In shaping the flint, too, they would have observed the sharp crash, the sudden splitting and the flashing sparks; what then could have been more natural for the people of such an age than to explain the stroke of lightning as the work of similar but more powerful forces, to associate it with a stone, preferably a sharp stone, and a superhuman power? Such an explanation of the lightning would have been in as complete harmony with the conceptions of a primitive age as the present theory (the electric

discharge, the splitting of the conductor that offers too great a resistance to the electricity, etc.) is in harmony with modern science. Moreover, in the atmospheric conditions of Europe, no natural phenomenon could more deeply impress a primitive race, or more urgently demand an explanation of the forces at work, than lightning.

The hypothesis put forward here, however, differs greatly from the usual theory as expressed, *e.g.* by ANDREE in his *Ethnographische Parallelen und Vergleiche*, II. p. 30[1]: "Diese Vorstellungen müssen übrigens verhältnissmässig jung genannt werden, denn sie entstanden erst, als die Steingeräte ausser Gebrauch waren und, gelegentlich aufgefunden, wie ein Rätsel erschienen," etc. Such a view, however, is evidently a superficial and quite untenable one. The wide extension of the thunderstone belief over practically the whole of the old hemisphere surely points to great antiquity. Here, indeed, we have to face a broad question of principle about which there is still much disagreement, the question whether similarity in popular beliefs, customs, and implements is due mainly to communication from one people to another, or to a common human tendency which is responsible for the same results in different countries. But it is unnecessary in the present case to enter into any discussion of this question in its general aspect. On reference to the section specially devoted to the particular evidence and quotations on the subject treated here (Chap. X), it will be seen that such consistency is found, not only in general outline, but also in many points of detail, between the various forms in which the thunderstone belief occurs in the old hemisphere, even in the very outskirts, eastern Asia, western Africa, and northern Europe, that an explanation of them as the result of evolutions taking place independently of each other, is impossible. A striking and undoubted instance of communication of religious ideas between two countries which at first sight seem widely separated in point of time and distance, will be adduced in the

[1] Pigorini, Cartailhac, Sal. Reinach and others have, however, expressed a view resembling that asserted here (cf. p. 40). A similar opinion has recently been briefly set forth with still greater distinctness by Bellucci (*L'Anthropologie*, XX. 1909, p. 33).

next chapter (VI. pp. 45 *seq.*). It will there be seen how the same conception of the thunderweapon which developed on Greek soil in classical times is fully alive at the present day in eastern Asia, whereas in its native country and in Europe generally it has long since disappeared.

The question of the extent to which the thunderstone belief has been spread from one region to another has frequently been obscured by the uncritical assumption that it is to be found in every part of the world which has passed through a stone age. As has been stated above, there are certain parts of the world where it is not indigenous, viz. the South Sea Islands, Australia, and America. Whilst the accounts derived from the old world are very numerous, and for each district give a special name for the thunderstone, with many local modifications of the general idea, the records from America are scanty and always give the names in Dutch or Portuguese or some other European language. Nor do they contain any features which have not been discovered on European soil. Those who have produced the evidence of the belief in America have themselves felt (though they were not always scientists and though the belief in question concerned Indian stone axes) that the thunderstone belief might have been brought in by European immigrants after the discovery. In some parts of America we know that quite different explanations were invented to account for lightning and its attendant phenomena (see p. 6). In eastern Asia, too (the Malay Archipelago and other places), the thunderstone belief meets and combines with native ideas of a different kind: the thunder, according to the popular conception, is produced by an enormous dragon, and the thunderstones (*i.e.* the stone axes) are the dragon's teeth [124]. It would seem quite clear that we have here a compromise between two "thunder-religions" which have come into contact at the eastern limits of the area in which the thunderstone belief is found.

From all the evidence adduced, then, we must conclude that the belief spread over the old world by communication from one people to another. The wide extension, consequently, denotes in itself great antiquity—for if we dismiss modern conditions

from our minds it may be laid down as a general rule, subject of course to many exceptions, that it is the oldest elements of human culture that have spread most widely. This assumption of great antiquity is fully confirmed in cases where the material for research leads us back to a remote period.

It is unreasonable and unnatural to look for the origin of the thunderstone belief in the attempts of a later age to explain stone antiquities found in the earth. There is nothing in the shape or exterior of such finds to suggest that they have fallen from the sky, and the statements sometimes made, that they are found especially when the rain has washed away the loose earth, would seem to be of secondary importance, if they ever had any significance at all. When the popular imagination was roused by stone antiquities found in the earth, it took quite different directions: the arrows were "elf-arrows," "elf-bolts": the axes had belonged to dwellers upon earth who were not human, creatures who had not learnt the use of metals (*i.e.* trolls, dwarfs, etc.: examples are given in FEILBERG, *Ordbog over jyske almuesmål*, under "Stenredskab"; in ANDREE, *Ethnograph. Parallelen*, II. p. 35, and in other places). The peasants of earlier days often formed a remarkably accurate view of the nature and purpose of the antiquities, in spite of all the changes in the normal shape of the implements that had taken place in the course of time. The conception referred to here is one which would naturally occur to the popular mind when seeking an explanation of stone antiquities found lying on the ground, and it is without doubt of much later date than the stone age.

The ordinary view of the thunderstone belief misses what is really the nucleus of the whole group of ideas. The conception formed of the lightning, not the explanation of stone antiquities, is the central point. That whole system of religious thought and sentiment, expressed in cults and customs and ritual worship, and spread over so vast an area, cannot surely have arisen merely from an endeavour to explain the discovery here and there of stone antiquities. The true source of the belief is the deep impression made by the thunder and lightning on the soul of primitive man. This is the real starting-point,

in the development of the idea, as it appears quite clearly in the actual traditions of various peoples and different periods.

The thunderstone belief, in fact, is not necessarily associated with ancient stone implements. Even the small country of Denmark, whose surface everywhere abounds in stone antiquities, must be divided into three different "thunderstone areas," where fossilized sea-urchins, flint antiquities, and fingerstones pass respectively for thunderstones. Similarly in other countries we find different conceptions of which some plainly indicate a very early date. In a great part of Norway [86–88], northern Sweden [83], Bohemia [100], and other regions, globular stones are regarded as thunderstones. The same idea is the basis of the Lithuanian [98] and the Gaelic [107] names for the thunderbolt, and we have already seen how Pliny (quoting Sotacus) speaks of round thunderstones [115*a*][1]. Amongst several peoples rock crystals are supposed to fall from the sky with the lightning [134]. Other stones may also be occasionally looked upon as thunderstones when found in places where the lightning has struck [83]. It cannot be maintained that the Etruscan haruspices in their search for the lightning did not rest until they had found a stone axe; we are merely told that they sought it out and buried it "in the guise of a stone" (*transfiguratum in lapidem*). Nor was the stone worshipped in early times at Gythion in

[1] The popular belief does not explain exactly why these stones have been regarded as thunderstones. The reason, however, does not seem far to seek. It is the use of the stone as a ball hurled from a sling, or by hand, which underlies this idea. There is a well-known parallel in the keraunos usually stamped on the Græco-Roman sling stones of lead: the sling stone is to strike the enemy as lightning strikes, and with the force of lightning. When fossilized sea-urchins are regarded as thunderstones in Denmark may not the reason, or one of the reasons, be that they have been looked upon as sling stones? In other places it is clearly the idea of an arrow or a javelin which has determined the ultimate development of the thunderstone belief. Sometimes the language itself is affected by it. In several parts of Italy *saetta* (Lat. *sagitta*) is the name for the lightning, and is used in curses and imprecations; how old this idea is on Italian soil is seen from the fact that in these very places the classical Greek keraunos has been altered by the addition of one or several arrowheads (see Jacobsthal, *Der Blitz*, p. 21) just as there were amulets of flint arrowheads found there in the early ages [115*b*]. In Slavonia the thunderstone is called *strelica* (*i.e.* arrow), on Swedish soil in some places *åskpil* (*i.e.* thunder-arrow), in Mecklenburg *dunnerpil*, etc. [134]. Here we may probably have the reason why belemnites in many places pass for thunderstones: their shape suggests an arrowhead.

Laconia under the name of the "fallen Zeus" a stone axe. Of Caligula it is simply said that he "hurled stones" at the sky in a thunderstorm.

It is, however, quite natural that the belief that lightning resulted from the descent of a stone from the sky should have been associated mainly with stone antiquities; everything, indeed, points to the probability of this form of the belief also dating back to the stone age. If it be objected that the people of the stone age cannot have worshipped stone axes which exactly resembled those made by themselves, it may be replied that everything suggests that a fetish-worship of weapons and implements, of which the axe ranked among the first, was practised in the stone age. The relics of this cult are most numerous in Babylonia and neighbouring countries, where various monuments dating back to the earliest historical times depict the spear, the club, and so on, often placed on an altar, as objects of worship [118*c*]. The cult lasted with remarkable tenacity until the Assyrian period and later when the weapons worshipped were conceived of as the representatives or symbols of personal gods, a fresh development of the original idea. In ancient Greece, too, we find survivals in the local customs of several districts of similar fetish-worship, which bear the stamp of great antiquity. Amongst peoples that had remained in a low stage of civilization it could be found alive and active far down in historical times. Herodotus says of the Scythians (IV. 62) that they built primitive sanctuaries, huge altars of faggots and earth. On the top of them stood an ancient iron sword—"this is the cult-image of the war-god"—to which they sacrificed sheep and horses every year; they also sacrificed prisoners of war, whose blood they poured over the sacred sword. The Alani of South Russia worshipped a naked sword as a god as late as the fourth century A.D., and from what we are told we have no reason to suppose but that it was the actual sword, such as they themselves ordinarily used, to which worship was paid (AMMIANUS MARCELLINUS, XXXI. 2, 23). In western Europe we find much evidence of a similar cult which in part dates back to the stone age; for instance, in representations on the megalithic tombs and other monuments

(SAL. REINACH, *Bronzes figurés*, p. 167). The so-called "symbolical axes" point in the same direction; they are imitations in amber of real axes (see *Aarböger for nordisk Oldkyndighed*, 1896, p. 388), or small reproductions in stone (see SOPHUS MÜLLER, *Stenalderen*, p. 11), of which we now have several examples from Denmark and other countries. Relying on the evidence adduced, and other evidence of a similar nature, various scholars long ago put forward the hypothesis that the European and Asiatic peoples of the stone age practised a fetish-worship of weapons and implements (LONGPÉRIER, *Congrès préhist. de Paris*, 1867; PIGORINI, *Bull. di paletn. ital.* XI. p. 33).

It is probable that the development of the thunderstone cult as a worship of stone axes was aided or at any rate influenced by this fetish-worship. But even without it there was nothing to prevent the worship of the thunderstone springing up and developing independently. Primitive man need not necessarily have reasoned thus:—"The stone axe I have found is exactly like the one I make myself; it must therefore have been made by another man like myself." He may just as well have argued:—"Yesterday it thundered in the east, and the thundergods descended to the earth; we crouched in our huts in fear; but to-day when the hunt took us to the fields in the east, we immediately found one of the thunderstones on the ground." No stone age is so remote that it has been impossible to find implements in places unvisited within the memory of man; and with the above conception of the phenomena of lightning already in the mind, to explain such finds as thunderstones would be perfectly natural. Even the highly civilized period of the ancient world abounded in kindred ideas. Here we need only recall the Roman *ancilia* (sacred shields). They were supposed (all or one of them) to have fallen from heaven; yet men did not refuse to accept this theory on the ground that they were shields of the same material and construction as those used by the warriors of the time, and must therefore have been made by the hand of man. In Greece the old belief that stones which were worshipped as gods had fallen from the sky, was

in some cases transferred to the statues which superseded the shapeless stones in the cult.

Thus there is no evidence which makes it impossible to assign the belief in and worship of thunderstones to the stone age, even if it be maintained that the belief was originally associated with the stone axes. And, in opposition to the general view, the examination of the traditions has yielded powerful arguments in favour of the theory that at any rate the nucleus of the belief, which still lives, belongs to the stone age.

These arguments may be summarised as follows:—

1. The wide extension of the thunderstone belief suggests that it is an element of human culture which at an early date was gradually spread from people to people over a great part of the world.

2. Ideas which may very reasonably be supposed to have been derived from this belief were known already in the bronze age in the ancient civilized countries at the eastern end of the Mediterranean.

3. The primitive nature of the idea in itself denotes its issue from a conception of nature and of religion which belongs to an early stage of human development; further, among the special features attaching to it there are ideas which are characteristic of primitive religion—that of the taboo, for instance, of which evident traces have been found in the traditions of various peoples.

4. The implements of the stone age and their use offer a very natural explanation of the origin of the belief, whereas in the later stages of human progress such conditions do not hold good.

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VI. The Classical Greek and the Tibetan Thunderweapon.

QUITE a different conception of the phenomenon of lightning is encountered in the pictorial representations of the Babylonian cycle of culture, which for classical Greece had a special and quite decisive significance in regard to the branch of the subject now under discussion. Another aspect of the natural phenomenon now comes to the front—the fire.

In the chain of ideas we have hitherto been following, it was the actual stroke upon which attention was concentrated; both the fire and the thunder-clap were regarded merely as consequences of the stroke. But in Babylonian art and throughout the whole region dominated by it, the lightning was depicted as the heavenly fire, a conception which also appears in inscriptions. Thus Assurnasirpal says: "For two days I thundered over them like the thundergod Adad; I made flames of fire to rain down upon them[1]." Whether the original inhabitants had previously had the conception of a thunderstone and this was superseded by the Babylonian idea of lightning can hardly be determined. It is possible that the representation of the lightning as the heavenly fire arose from the cosmogonic system which Babylonian astronomy had formulated at an early date; in that case it would, in spite of its age, be of a comparatively late, one might almost say, of a literary origin. But it is also possible that this conception of lightning as fire is a genuinely original one. It is not difficult to suppose that the natural conditions of treeless plains and long, grasslike vegetation, dry and withered in

[1] Y. LE GAC, *Les inscriptions d'Assur-nasir-aplu*, III. p. 82, kindly translated by Professor Valdemar Schmidt.

summer, might in primeval ages have caused the mind of man, when contemplating the effects of the lightning, to fasten especially on the fire; in wooded districts, on the other hand, where the lightning most frequently struck the trees, it was the powerful stroke splitting the tree that drew the attention first and foremost.

The fire was conventionally represented in Babylonian art by wavy or zigzag lines. It is seen in this form in pictures of the sun, in representations of the sun-god and in other cases. In a similar way the lightning is represented sometimes by a bunch of three flames, sometimes by two or three zigzag lines joined together by a stem or handle. Lightning is again depicted in the hands of Adad or of other gods, or in other cases as placed on an altar or, still more frequently (in pictures which have not yet been fully explained, but are supposed to represent sidereal phenomena), on the so-called Kudurrus (boundary-stones) whose date lies between 1300 and 700 B.C. (indexed and treated by MORGAN in *Mémoires de la délégation en Perse*, I. and VII.; W. J. HINKE, *A New Boundary Stone of Nebuchadrezzar*, I., Philadelphia, 1907). In this case the lightning is usually seen behind the bull, which is the animal sacred to Adad. On the ancient Babylonian cylinders the lightning is often depicted in the same form. In fig. 17, which represents one of the frequent scenes of worship, we see on the extreme left the thundergod with the bifurcal lightning in his hand; at his feet is a small kneeling figure, probably a lesser demon, with a flash of lightning in each of his uplifted hands. The three-pronged thunderweapon of later date is wielded by Adad on the cylinder depicted in fig. 13, p. 26. The Assyrians, by doubling the active part of the weapon, evolved a form which already closely resembles the Greek keraunos (see *e.g.* Roscher's *Lexikon*, II. p. 2359). An imperfectly preserved representation of the lightning in gold, 45 centimetres long, found in Assur, seems most probably to have been of this shape (depicted in *Mitteil. d. deutschen Orient-Gesellschaft*, No. 28, 1905).

Fig. 17.

The representations of the thundergod referred to above (pp. 24 *seq.*), from the north Syrian and Hittite cycle, become fully intelligible when considered in connection with the evidence from Babylonia: the god wields the lightning in one hand as in the Babylonian representation, in the other he holds an axe, the genesis of which has been described in an earlier chapter. This double representation continued for a long period in the pictures of the thundergods of Asia Minor, especially in those of Dolichenus, and in Roman times was transferred with his worship to Europe.

Jacobsthal has shown in his excellent book, *Der Blitz in der orientalischen und griechischen Kunst* (Berlin, 1906), how the Assyrio-Babylonian form of the lightning was adopted into Greek art about 700 B.C.; how it was conventionalized as a flower or bud; and how this conventionalized type was made intelligible later on by the addition of realistic flames, wings, and other ornaments. But the flower-picture is constantly confused with another conception, that of the lightning as a solid weapon of metal, which occurs from time to time throughout the course of the evolution and whose origin will be clear from what has been already said. The evolution of the classical thunderweapon closes with the Hellenistic period; what follows is only a repetition. In this connection there must, however, be mentioned the Italian conception of the lightning as an arrow shot from heaven (cf. p. 38, note).

Among European peoples the classical representation of the lightning was hardly known or used outside the pale of classical culture. A barbaric imitation of it is found occasionally on German and Scandinavian weapons dating from the time of the migrations: in inlaid work on the spear-head from Müncheberg, Brandenburg, and as an engraving on a bone arrowhead from the moor-find at Vimose, Funen [79]. The position of the figure on a weapon certainly points to classical tradition, but in other respects the form suggests a debased misinterpretation, more so in the Danish than in the German example. The design is evidently merely a mystic symbol, like the others found in company with it on the weapons (svastika, triquetrum, etc.). In the transference of the symbol to barbaric peoples the original

meaning of the figure has been lost, and no new idea has grown round it in its new home. It is a solitary off-shoot of southern culture which, as in so many other cases, has died for want of nourishment.

It was quite otherwise at the opposite boundary of the domain of classical culture. When in the study of Greek and Italic works of art we have become familiar with the stages of evolution preliminary to the forming of the classical keraunos as it is known from the art of the Hellenistic period and from copies in later Roman art; when we see, too, how the separate components of this thunderweapon have only by a gradual process been joined to form a consistent whole, it is remarkable to find at the present day a representation of the lightning in the far east, which differs from the classical conception only in minor points of detail. Only one explanation of this

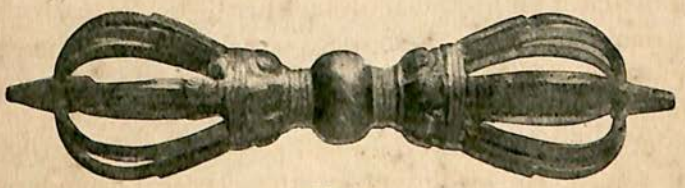

Fig. 18.

astonishing fact is really possible; to suppose an independent development in each place, leading to identical results, is absurd.

The priest of Tibet in certain religious ceremonies holds a bronze bell in his left and a bronze *dorje* (fig. 18) in his right hand. These instruments are employed in incantations, and a ritual representation of the act of coition is also performed (see ROCKHILL, *Ethnology of Tibet*, p. 740, pl. 41). Several of the deities of Tibetan religious art carry the *dorje* as an attribute. A legend from Nepal relates how Buddha wrested the thunderbolt from Indra in battle [119*a*]; the weapon of Indra then reappears, on Tibetan soil, as the *dorje*. In a famous temple in Nepal (Soyambhunath or Shimbhoonath, west of the capital, Khatmandu) a colossal thunderweapon of this kind is placed on an altar as an object of worship (see fig. 19). How closely this cult resembles on the one hand the worship in the Hellenistic cities of Asia of the keraunos (see p. 15),

and on the other the thunderstone altars of southern India, need scarcely be pointed out. The word *dorje*, according to the explanation kindly given by Professor Dines Andersen, etymologically means "the king of stones," and there can hardly be any doubt that the thunderweapon of metal in the Lamaistic cult is the successor of the thunderstone, just as was probably the case in the cults of Hellenized Asia referred to above.

In Japan the Buddhist priests employ a very similar instrument, called the *kô* [127], which is found in three slightly

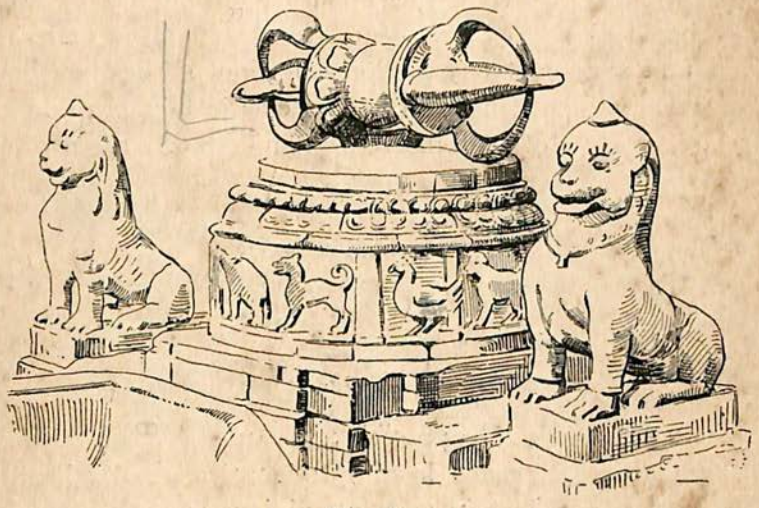

Fig. 19.

different forms, with one, three, or five prongs on opposite sides. Some difference in use is involved in the different shapes, and the particular number of prongs is said to express some special religious idea. There are also other slight differences between the Japanese and Tibetan forms of the instrument; in Japan the middle part with its two rows of ornamental leaves is doubled, and the outer prongs curve in distinctly towards the centre prong, but are not joined to it. These, however, are only slight variations which naturally arise when the use of such an object is spread over a large area. In all essential points the two instruments are exactly alike. As in Tibet, so in Japan, Buddhist mythology and art endow many supernatural beings with the

thunderweapon. One of these figures, the demon Fudô-mio-ô, is depicted in fig. 20.

The thunderweapon of Tibet and Japan is, as has been already remarked, only a slightly altered form of the Hellenistic keraunos as depicted, amongst other places, on the altar of

Fig. 20.

Pergamon (fig. 21). Here we see a handle adorned at each end by a wreath of leaves, out of which springs a well-marked central prong, surrounded by three other prongs. It is a metal weapon that is represented here, and one of the giants has been deeply wounded by it in the thigh; the prongs have pierced

the flesh and protrude on the other side. The thunderweapon of Tibet and Japan corresponds to this example in every detail, except that its outer prongs curve in at the end towards the centre. But when compared with all the changes which the thunderweapon underwent amongst the Greeks in a few centuries, this variation is so slight that we may say without hesitation that it is the Hellenistic thunderweapon which has been preserved to this day in the far east.

Fig. 21.

As an explanation of this remarkable circumstance we may recall the fact that early Buddhist art is permeated with Greek elements, which can only have been derived from the Hellenistic kingdoms of central Asia. It is through these channels that the thunderweapon must have come. In these Asiatic countries the old worship of the actual lightning, now represented by the classical Greek thunderweapon (the keraunos), was, as we have already seen, revived. In Seleukeia in Syria, where this cult played an important part (see pp. 14 *seq.*), we find an inscription referring to a priesthood of *keraunophores* (*C. I. G.* 4458), who, as their name suggests, carried the thunderweapon at certain ceremonies and festivals (cf. the Greek *lampadophores*, *pyrphores*, *kleidophores*, etc.). That a similar cult spread with other Hellenic ideas to the Indo-Bactrian provinces, is rendered very probable by the fact that the thunderweapon is found on coins of those countries [119*c*]. On the earlier of these coins exclusively Greek deities, Zeus and Athena, are armed with it;

on the later ones (from the second century A.D. and onwards) it is found in the hand of the four-armed Siva, and from him no doubt a direct tradition leads to the many-armed Tibetan deities, amongst whose attributes the *dorje* remains to this day. The evidence extant makes it clear, therefore, that in this connection there has been close contact between two areas of culture which at first sight seem widely separated in point of time and space—ancient Greece and modern Tibet.

VII. The Trident: the Greek Triaina and the Indian Trisula.

THE Hittite thundergod's equipment was of a twofold nature: besides the single-edged bronze axe of the country he carried a weapon with three wavy prongs meeting in a handle at the bottom (see fig. 12). The latter is the Babylonian representation of the lightning (cf. p. 43) in but slightly altered form. Images of the Hittite god, as has been previously described, were also carried off to Babylon, where they left traces in Babylonian works of art. Assyrian gods wield the same trident-like weapon [118 *a*]; amongst the Assyrians, as elsewhere all over the world, the lightning was the chief weapon of the heavenly gods in their war against evil beings.

Fig. 22.

Fig. 24.

Fig. 23.

The land of the Hittites does not, we may be sure, mark the western boundary of the area to which this Babylonian representation of the lightning found its way in its simple form. The Kommagenian thundergod (Dolichenus), in the time of the Roman empire, carried a double-axe as a weapon as well as the classical Greek keraunos, which was a development of the doubled form of the Babylonian thunderweapon as it was fashioned by the Assyrians (cf. p. 43). From Mylasa in Caria, on the other hand, we have a series of coin-types which point directly to the Babylonian form. A small autonomous bronze coin (see

fig. 22) has the double-axe on one side, and on the other a trident conventionalized in the same way as Poseidon's weapon in the later Greek age. The types on the obverse and the reverse may indeed be independent of each other, but the evidence of other coins suggests a connection between them. Bronze coins of Augustus and Septimius Severus (fig. 23) have on the reverse the figure of a double-axe surmounted by a trident; below the figure is a crab. That this combination of axe and trident did not originate in the time of the Roman empire may be seen from coins of Alexander stamped at Mylasa, on which the prongs of the trident grow out of the actual blade of the axe[1]. The Carian territory was in close contact with that of the Hittites, and though the conventionalization of the trident as the usual attribute of Poseidon has hitherto led archæologists to another conclusion, it cannot well be doubted that the two divine weapons, which on Carian soil are found so closely connected, must originally be of the same nature as the attributes with which the Hittite thundergod is endowed: the Carian axe corresponds to the Hittite axe, the trident to the three-pronged implement, and both are expressive of the lightning.

But then the question may arise as to what are the original facts about Poseidon's trident (the *triaina*). That the Greeks in historical times usually interpreted it as a fishing spear belonging to Poseidon in his capacity of sea-god is beyond question. On coins from Troizen in Argolis the trident appears with two barbs on each side of the middle prong, whilst the other two have the barbs on the inner sides only (fig. 24), exactly as in an ordinary fish-spear. Students of Greek mythology have hitherto generally acquiesced in this[2]. Tsuntas has attempted in an ingenious exposition to connect this construction with a hypothesis of the early conditions of life amongst Greek islanders[3]. But is this the original nature of Poseidon's

[1] L. MÜLLER, *Numismatique d'Alexandre le Grand*, p. 256, pl. 16, Nos. 1141–1143.

[2] The interpretation of triaina as fishing spear appears in PRELLER-ROBERT, *Griechische Mythologie*, I. p. 570; GRUPPE, *Griech. Myth.* p. 1160; BULLE in Roscher's *Lexikon*, p. 2855.

[3] Ἐφημερὶς ἀρχαιολογική, 1898, pp. 199 *seq.*

weapon? Or has the original conception undergone a change which, in view of the ideas held about Poseidon in historic times, was so natural as hardly to require explanation?

Welcker, indeed, felt dissatisfied with the ordinary explanation, and in his work on Greek Mythology (I. p. 628) declared it to be unconvincing, though he realized that it dated back to antiquity. As a matter of fact, the passages in ancient Greek authors and the representations in Greek art in which Poseidon uses his triaina as a fishing spear or harpoon are not numerous, although, as we know, in the hands of the gods the weapons and implements are always employed in full accordance with their ordinary purpose, and only endowed with greater powers than the usual human instruments. In Homer, Poseidon the Earthshaker has recourse to his trident when he stirs up all nature: a hurricane rages on all sides; land and sea are hidden by clouds; the gloom of night covers the sky (*Odyssey*, V. 291);—when he shivers the rock (*Odyssey*, IV. 506); or when, with Apollo, he makes the waterbrooks of Mount Ida swell, and scatters the stones and tree-trunks which the Achæans have laboriously joined to a wall round their camp (*Iliad*, XII. 27). Poseidon's conduct here is reminiscent of the Assyrian storm-god "Adad the mighty, who overwhelmeth the regions of the foe, lands and houses alike" (Tiglathpileser I.'s cylinder-inscription from Assur, about 1100 B.C.[1]). If the trident was originally a fishing spear it is remarkable that every trace of it as such has disappeared so completely from ancient epic poetry. The poet may indeed describe men as "speared like fishes" by beings of gigantic strength (*Odyssey*, X. 124); but neither fishes nor foes are anywhere speared by Poseidon's trident. The fact that the Homeric poems never give us any really clear picture of the trident and its use seems to prove that in the region to which the poems belonged it was little known or already half forgotten. The references quoted above—the only ones to be found in the *Iliad* and *Odyssey*—are without doubt best understood if the trident is assumed to be an old oriental thunderweapon, which had reached a part of the Greek world, and had there been associated with the Earthshaker (ἐνοσίχθων) to whom various

[1] BUDGE and KING, *Annals of the kings of Assyria*, I. p. 29.

Greek peoples ascribed the earthquakes, the shattering of rocks, and other natural disturbances with which they were familiar; and it is evident that it had not yet assumed the Hellenic form of a fishing spear at the time when these and other old religious ideas were being fused with the conception of the sea-god—a fusion to which the poems themselves materially contributed. If the triaina were an ancient implement of this kind, originating and developing on Greek soil, it would be strange that the nature of the implement, originally simple and well-known, should have become vague and obscure in the Homeric poems, and in later historical times should again have appeared in a clear and intelligible form.

But early poetry is not the only ancient source in which the nature of the triaina is so far from that of an ordinary implement. It is the same in early art. Near Corinth, in 1879, several painted votive tablets, of the 7th and 6th centuries B.C., were found, which had been taken from a sanctuary of Poseidon in the neighbourhood, and buried there[1]. The weapon of Poseidon is sometimes crowned with a trilobate lotus flower (*Ant. Denkm.* I. 7, 18; II. 23, 15; 23, 17; see fig. 25),

Fig. 25.

[1] Most of these are now in Berlin and are described and depicted in Furtwängler's *Vasensammlung*, Nos. 347–955, 3920–3924; Pernice, *Jahrbuch*, 1897, pp. 9–48; *Antike Denkmäler*, I. pll. 7–8; II. pll. 23–24, 39–40. The objects at the Louvre published in *Gazette archéol.* 1880, p. 101; *Annali dell' inst.* 1882, p. 182, pl. U. 1–2; *Monuments grecs*, Nos. 11–13, pp. 23 *seq.* Some of the trident-pictures on these tablets have been collected in the *Journ. Hell. Stud.* XIII. (1893), p. 17, by H. B. Walters, who from the evidence of these materials concludes that Poseidon's attribute was originally an ordinary sceptre crowned with a lotus flower, which by a purely formal process became a trident. Mr Walters advances this theory with some hesitation and it cannot be upheld against the passages in Homer and the survivals in religious cults: these show that the weapon had from early days a special significance, and that the three prongs are an original feature of it.

or with three lotus buds (II. 24, 3); in other cases it is depicted in a shape that may well represent a fishing spear. Such uncertainty in form does not appear in pictures of weapons and implements that have their origin in the affairs of daily life.

Even if Jacobsthal's interpretation of the flower as a common Greek symbol for fire be not accepted, the conventionalization of the trident as a lotus bloom is quite analogous to the change, on Greek soil, of the Assyrian thunderweapon to two flowers pointing in opposite directions (cf. p. 44).

On the oldest coins of Poseidonia, which date back to the sixth century B.C., Poseidon is depicted as wielding the trident in his raised right hand, a position similar to that of Zeus, Lord of the lightning, as he appears on Messenian coins and in a series of archaic statuettes (see the coins placed together for comparison, figs. 26 and 27). The artists responsible for the figure which is the basis of the coins of Poseidonia had probably no idea that the trident borne in the hand of the god was originally a thunderweapon, but no more can we suppose that they regarded it as a fishing spear; the figure has the same air of unreality as the descriptions in Homer and the pictures on the Corinthian votive tablets.

Fig. 26.

Fig. 27.

In the local legends of Greece Poseidon is often responsible, as in Homer, for upheavals of nature. The part played by the trident in such events has in some places been preserved in the cult; thus on the Acropolis of Athens a trace of it could be seen on the rock inside the Erechtheion, and the spot was held sacred as long as the ancient religion prevailed.

Partly on this ground USENER (in *Rhein. Mus.* 1905, p. 23) assumes the trident to be a thunderweapon, just as E. H. MEYER (in Roscher's *Lexikon*, p. 2797), in his treatment of the Homeric passages, briefly expresses a similar opinion[1]. Usener points out that, according to the latest investigations made in the Erechtheion, an opening is found to have been made in the roof

[1] See also Eduard Meyer, *Geschichte des Altertums*, I. 2 (1909), p. 638.

above the mark left by the trident, just as was the custom over places that had been struck by lightning (see p. 30). The evidence adduced above strongly supports this explanation of Poseidon's weapon, and from what has been already said its origin can be no longer doubtful: it is an adaptation of the Hittite and Babylonian thunderweapon, the spread of which has been traced over Asia Minor as far west as Caria. It must have been adopted in Greece very soon after the Mycenæan age. It never became generally recognized as a thunderweapon; it was supplanted by the doubled form, which was brought in soon after from Assyria, and changed by the Greeks to the classical keraunos, whilst in a few places the old double-axe was preserved as an expression of the lightning. Thus there was an easy opportunity, as the conception of Poseidon developed into its definite form, to interpret the triaina afresh as a fishing spear.

A parallel case always acts as a support to a theory, and in the domain of archæology and ethnology may prove, on closer examination, to be something more than a mere repetition of identical features by another people. On the altars of southern India, described in an earlier chapter (pp. 8 *seq.*), an iron trident (fig. 1) is fixed in the earth beside the thunderstones. That this trident also represents the lightning is clear from the evidence brought forward above. This twofold means of expressing the lightning has already been seen in the attributes of the Hittite, the Dolichenian, and the Carian thundergods; far from being an argument against the explanation of the trident as the lightning, it will rather tend to confirm it. In India, however, this interpretation of the trident does not need the support of parallels from other countries: it may be historically traced to ancient literary sources and pictorial representations. In the Indian pantheon of post-Vedic times Siva is the successor of the Vedic storm-god Rudra, and his weapon is the trident (*trisula*), which in his hand is certainly the symbol of the lightning. There is also a series of old Siva representations on the coins of the Indo-Bactrian kings of the early centuries after Christ. The coins are all much alike, and it will be sufficient here to refer to the coins of King Kadfises II.

dating from about 50 A.D. [119*d*]. They show on the reverse the god standing in front of a bull, with the trident in his hand; on the obverse the king is seen making sacrifice upon an altar; next to this is a weapon shaped like a trident, with an axe-blade fixed on the handle. A reproduction is given in fig. 28. The same design is found on coins of the reign of "Bazodeo," in the second century A.D. (see figs. 29, 30). The similarity between the scenes depicted on these coins and the earth-altars in southern India at the present day is a striking one; the only real difference is that the trisula is now actually placed on the altar, whereas on the old coin-designs it stands beside the altar on which the sacrifice is made; but the change is not a great one. The axe-blade and the trident are both symbols of the lightning: on coins of a somewhat later date (111–129 A.D.) Siva bears, amongst other attributes, the trident and the Greek keraunos [119*c*]. In the primitive cult of southern India the trisula is placed together with the stone axe (or even with

Fig. 28.

Fig. 29.

Fig. 30.

pointed natural stones); in the coin-designs the axe which is fastened to the handle of the trident is shown by its broadened edge to have represented one with a metal blade[1]—another example of how the metal axe of a higher civilization may take the place of the stone axe as thunderweapon.

The resemblance between the Indian coin-designs and ancient Babylonian and other cults of western Asia is equally plain. Here, too, weapons and the like are placed on or near an altar as objects of worship. In the Indian design the trident and the one-edged axe are combined in this cult, just as we have seen

[1] Old bronze axes, some with a similarly broadened edge, were regarded as thunderweapons fallen from the sky in the Malay Archipelago as late as the seventeenth century: G. E. RUMPHIUS, *De amboinsche Rariteit-Kamer*, 1741, p. 212, pl. 50. Also in southern China and the districts on the northern frontier of India the same belief is still associated with the old bronze *celts*.

the Hittite thundergod bearing both these weapons. Finally, it is scarcely necessary to recall the similar design on the coins of Mylasa, where the blade of the axe (there the double-edged axe) and the trident are joined on the same handle or upright. In all these cases we have variations of the same phenomenon, and these variations must be admitted to be very slight when we remember the great distance between the different countries where evidence of it has been found.

Briefly, then, the development was as follows:—from the old Babylonian representation of the lightning, *i.e.* two or three zigzag lines representing flames, a tripartite thunderweapon was evolved and was carried east and west from that ancient seat of civilization. Together with the axe (in western Asia Minor the double-edged and towards the centre of Asia the single-edged axe) it became a regular attribute of the Asiatic thundergods. The extreme limits of its extension are India in the east and Greece in the west. The Indian trisula and the Greek triaina are both its descendants.

VIII. Mjölnir.

IT now remains to add a few remarks on the thunder-weapon most familiar to the Scandinavian, Thor's Mjölnir [80, 92]. A detailed account of the material for this portion of the subject, and the various questions connected with it, will hardly be necessary as the subject has often been treated already. The reader is referred to O. Montelius' and Sophus Müller's recent expositions[1]. Here we need only review the main facts upon which, in accordance with the preceding investigation, our conception of the Scandinavian thundergod and his weapon must be based.

In Scandinavia, as in other parts of Europe, we must presuppose a primeval worship of the actual thunderstone as a god. The belief in a personal god, in whose hand the thunderweapon is placed, is of later growth. In Scandinavia the same evolution took place as has been described in a former chapter in regard to the Hittite, Assyrian and Hellenic countries. But as the Scandinavian evidence, both literary and pictorial, is between ten and twenty centuries later, it seems clear that the actual evolution took place at a much later date than the corresponding development in the countries of the south and east. The aspect of Scandinavian religion, at a period almost contemporary with that of the Hittite-Assyrian god, which the sun-image from Trundholm has revealed to us, does not favour the idea that the Scandinavians of those days worshipped a thundergod in human shape. It was the sun itself which was worshipped, and it was the image of the sun which was employed in the ceremonies connected with this cult, the horse

[1] *Svenska fornminnesföreningens tidskrift*, 1900, x. pp. 277–296; *Aarb. for nord. Oldkynd.* 1900, pp. 189–195.

only being added to express its motion. Similarly the lightning was without doubt worshipped in the shape of the actual thunderstone. How much later the personal thundergod appeared on Scandinavian soil the scanty material at our disposal does not enable us to determine. We can only say that the many statuettes and reliefs of a religious nature, dating from the Roman period, suggest that the development which led to a worship of gods in human form must at that time have been practically complete[1].

The weapon wielded by Thor was the hammer. That in the later iron age it was a metal hammer is certain. According to the tradition it was forged by the dwarfs (cf. p. 27), and

Fig. 31.

was depicted as a common short-handled hammer [80], sometimes with the haft plainly passing through the head. Small reproductions in silver were in the Viking age commonly worn as charms fastened to a necklet (see fig. 31). The Christian cross, as has often been asserted, probably gave rise to this custom, as it was worn hanging from a necklet in a similar way in the early middle ages; but parallels are also found

[1] Cf. SOPHUS MÜLLER, *Nordiske Fortidsminder*, I. p. 317. We cannot, as some have attempted to do, adduce the figures of bronze axes on the Kivik tomb as evidence that the Scandinavians in the bronze age worshipped a thundergod armed with a metal axe.

in pagan antiquity, in the Etruscan necklets with their flint arrowhead pendants [115 *b*, cf. p. 28]; and in the Assyrian neck-ornaments with lightning-designs [118 *b*].

Familiarity with the thunderstone belief which still exists has presumably led to the theory, so often advanced, that the weapon originally wielded by Thor was a stone weapon. But this theory cannot find support, as some have attempted to show (*v. Journ. Anthrop. Inst.* 1900, p. 24), in the etymology of the word "hammer," which originally meant stone. "Hammer" is no special name for the thunderweapon, but the common name for man's implement. Etymology then only suggests that the implement used for hammering was originally a stone, and we do not need philology to tell us this. Nor can the Swedish names for the thunderstone (*thorvigg*, *thorkil*) be adduced as arguments in this connection; the worship of Thor was of such vital significance throughout the whole of Scandinavia that the name of the god and the words derived from it, with a few well-known exceptions, became common names for the thunder. The word Mjölnir means "crusher." In the mythical narratives the blow it delivers and its terrible power are often referred to, but the fire kindled by the lightning hardly ever. This again confirms what has been said in earlier chapters, that the central feature of the European conception of the phenomena of lightning and thunder, the first fact seized by the primitive intelligence, was the stroke itself. This is still clearly shown by actual expressions in the language, "the lightning strikes"; in Danish and Norwegian dialects, "the thunder strikes," etc.

But even if we do not admit the weapon in Thor's hand to have been a primitive stone weapon, certain characteristics may still have been transferred to it which originally belonged to the thunderstone. Thus it has long ago been said that the hiding of Mjölnir "átta röstum fyr jörð neðan" (*i.e.* eight miles under the ground) is a reminiscence of the idea associated with the thunderstone belief that the stone sank deep into the earth. Missile axes or hammers (like the tomahawks of the Indians) were not known amongst the early Scandinavians; yet Mjölnir is a missile, doubtless because the thunderstones, according to popular belief, were hurled from the sky with the lightning. The thunderstones

were found everywhere, they required no further explanation. But there was only one Mjölnir: and in order that it might always be ready in the hand of the thundergod, the power was attributed to it of returning to him of its own accord. Ancient Greece had a similar problem to solve in regard to its keraunos. There, as far as the problem was solved at all, the eagle was said to bear the thunderweapon back to Zeus (explained by USENER, in *Rhein. Mus.* 1905, pp. 26 *seq.*, as a thunder-bird—like that of the American aborigines?). As to the use made of Mjölnir in making compacts (still seen in the "knocking down" of lots at auctions), at consecrations, as a sacred token, etc., we need only here refer to the analogies in ancient Greece and Italy treated above.

That the evolution which in the northern countries resulted in the belief in a thundergod of human shape armed with a weapon of metal, should have taken place independently of the corresponding development in the southern and eastern countries, can hardly be probable if we accept the general views on the evolution of culture on which the investigation of this particular subject has been based. There is far more reason for supposing with Sophus Müller, Montelius and others (see p. 58, note), that we have here a result of the general diffusion of human culture in which not only material substances and the skill and knowledge attaching to them, but also beliefs and customs spread from the ancient seats of civilization over the whole of Europe. Evidence of this may be seen in many of the finds and monuments belonging to prehistoric times. Nor is the Mjölnir of Thor an isolated phenomenon peculiar to Scandinavia. Even if we cannot in this case clearly trace all the stages of the connection between the southern and the northern countries it is still to be remembered that other European peoples in pre-Christian times worshipped a god wielding a similar weapon, for instance, the Celts [110 *b*], the Lithuanians [98], and the inhabitants of Siebenbürgen in the time of the Roman empire [96 *b*].

The movement which brought the axe or hammer as the weapon of the thundergod to Scandinavia did not stop with the Scandinavian peoples, but spread still farther to the northern boundaries of the continent. From the Scandinavians Thor's Mjölnir was adopted by the Laplanders who had previously had

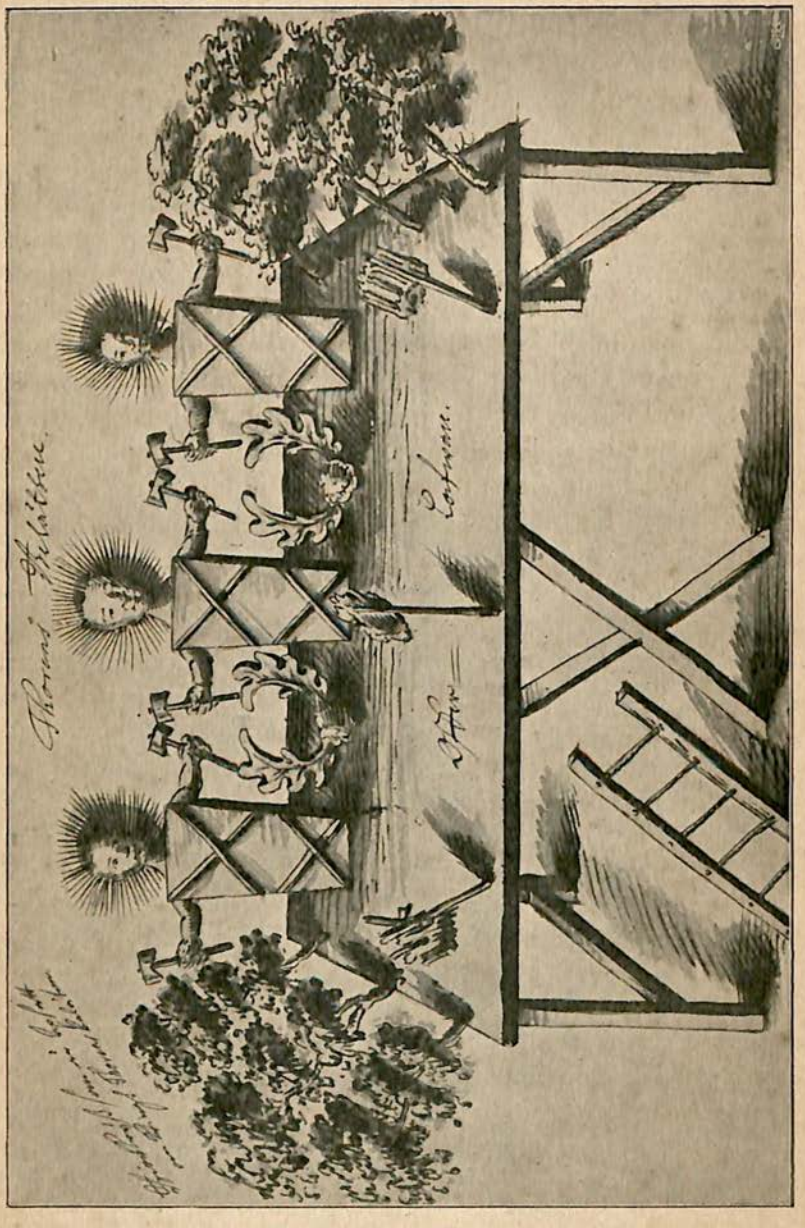

Fig. 32.

a different conception of the weapon of the thundergod; they also shared in the general thunderstone belief, and, like many other peoples, have preserved it to the present day [106]. As the Laplanders only became Christians in the course of the seventeenth century, we have a fairly accurate knowledge of many features of their old religion. The thundergod and his hammer are depicted on their magical drums and representations of his cult are also preserved. Probably the finest and best of these is the picture of 1671 reproduced in fig. 32. On the large sacrificial table which is decorated with branches of birch, are seen three images of the thundergod; in front of them are three wooden sticks, bearing the pieces of flesh offered to the god. Before leaving this last survival of the worship of the thundergod on European soil, we may notice once more a feature often remarked before, namely the multiplication of the thunderweapon. Not only are three images of thundergods, all alike, placed on the sacrificial table, but each of the gods carries two hammers.

IX. Retrospect.

WE have traversed a long road, and the impressions of the journey may be many and varied. In conclusion, therefore, it will be well to consider in a brief retrospect the main paths along which our enquiries have led us.

In the remote past the idea arose amongst the peoples of the old hemisphere that lightning and thunder were produced by the descent of a stone from heaven to earth. The idea had its origin in a simple interpretation of natural phenomena: when the lightning killed a man, split a tree, or tore a hole in the ground, it was thought to be the result of a blow similar to one struck by a man with human implements, but of much greater force. The stone which shot down from the heavens contained in itself the superhuman power manifested in the effect of the lightning; the thunderstone in fact was a divine being, dangerous and terrible, the object of worship and of fear. Further the stone itself and everything struck by the lightning were taboo. At a very early date, certainly by the time of the stone age, this belief was associated with fashioned stone implements of various kinds, which were found on the ground; these were mostly axes but there were also arrowheads and rounded missiles; no one could tell whence they came, and sometimes, we may suppose, they were found in places where a thunderstorm had raged.

Hence arose a worship of stone axes as thundergods in those countries where religious ideas assumed a definite shape. In the bronze age these axes were in several places succeeded in religious cults, as in ordinary life, by metal axes. When religion reached the anthropomorphic stage, the bronze axe became the weapon of the thundergod. This development can be distinctly traced in the countries at the eastern end of the Mediterranean; we

know that in the bronze age in the Greek Archipelago bronze axes were placed on an altar and worshipped; that in historic times the worship of a personal god carrying the double-axe as a weapon was practised in Asia Minor and the neighbouring islands; and that the Assyrians and Hittites had a god armed with the single-edged metal axe. Through channels which cannot be traced in each particular case the worship of this thundergod was, like other ideas belonging to the same seat of civilization, borne across to various European countries. There the double-axe was in several places supplanted by the hammer or the single-edged axe; we find descendants of the old thundergod of the Mediterranean countries represented amongst the Celts by Sucellus, amongst the Lithuanians by Perkun, and in Scandinavia by Thor, whilst the latest descendant is seen in the hammer-armed thundergod of Lapland.

Egypt, in other respects the source of so many ideas and of such great contributions to human progress in the old world, has no share in the development of this belief, for the simple reason that it hardly ever experiences thunder. Consequently thunder and lightning, which of all the phenomena of nature made the deepest impression on the mind of primitive man, engendered no religious idea in the minds of the Egyptians.

In that other ancient seat of civilization, by the lower courses of the Euphrates and the Tigris, another idea took shape at an early date: the lightning was regarded as the heavenly fire. Whether this conception dates back to as early a period as the thunderstone belief, or whether it is of later origin and has superseded the latter, is uncertain. In old Babylonian art and picture-writing fire was represented by zigzag lines. Hence arose a conventional representation of the lightning in the form of two or three wavy lines joined together at the bottom. In this shape the lightning became an object of worship and was placed as a weapon in the hand of Adad, the Babylonian thundergod. As a cult-object the lightning was made of some hard material, generally no doubt of metal, and in this form was carried east and west to those nations which came under the influence of the Babylonian civilization. Amongst some of the tribes of western Asia, the Hittites for instance, the thundergod was armed both

with the national axe and also with the three-pronged Babylonian lightning. Among the Greeks the latter reappears as the trident, round which, as the weapon of Poseidon, a different interpretation gradually grew; among the Hindus we find it represented by the trisula, which in the hand of Siva never lost its original character of a thunderweapon. By doubling the active part of the three-pronged lightning-image the Assyrians evolved another form of the thunderweapon which passed over to the Greeks and with them attained its fullest development in the keraunos of Zeus. The evolution of this lightning-design became complete in the Hellenistic period, and the form was preserved among European nations and in the Hellenized regions of Central Asia as far and as long as they were dominated by classical culture.

But, untouched by all later developments, the ancient thunderstone belief, which satisfied the popular craving for an explanation of natural phenomena, has survived amongst the nations of the old world up to the present day. In earlier days it was in some cases combined with the established religion, for instance amongst the Romans; later on the influence of higher religions deprived it of the religious element which was, originally, one of its intrinsic features. Only among a few races in a low stage of religious development do we still find an actual worship of thunderstones, such as is practised in southern India and on the Guinea Coast. In the extreme north of Europe, in Iceland, where thunder is a rare event, the thunderstone belief which the early Norwegian settlers brought with them disappeared, because the natural conditions of the country did not favour its development. On the other hand, it has in modern times been carried by European colonists to foreign continents where the natives had formed quite different ideas about the thunder and its cause.

This enquiry into the thunderweapons of different peoples and different ages has carried us through a region which is far removed from the established forms and material limits of actual life; where the human mind, unhindered by practical considerations, would seem to be able to choose one means of expressing its ideas just as well as another.

But even here we feel the close connection of all human development and the great economy which governs it. An idea which has once been developed and found to serve its purpose is not lightly thrown away. It lives on persistently, though sometimes changed and obscured, and is spread far and wide. Entirely fresh and independent ideas are but seldom brought forward: one generation lives by the thoughts of those who have gone before. The idea itself and its outward expression pass on from people to people, often only with slight modifications suited to the special needs of the different nations.

The elaborate thunderweapon, which the exuberant Greek mind formed out of its Assyrian prototype and assigned to Zeus as his weapon, belongs with Zeus and Juppiter to a bygone age on European soil, but in far Tibet the Lama still swings it daily in his right hand as he performs the prescribed ceremonies and incantations. The lightning-image fashioned by ancient Chaldean art has long ago disappeared from the fertile river-country, together with the developments of it among neighbouring peoples; yet to this day the pariah of southern India plants it on his homely earth-altar. And, as late as our own childhood, thoughts belonging to a past even more remote lived their unconscious life in the mind of the peasant on the remote moorland tracts of Jutland when, as a protection for his house, he carefully hid the thunderstone in a place where "no one could set foot."

X. Sources and Particulars.

1–80. Denmark[1].

Thunderstones (Flint Axes or other Stone Antiquities).

1. Two ground flints were found in the barrow at Jægerspris, district of Frederiksborg, 1744, of the kind that peasants generally call thunderstones. [E. PONTOPPIDAN, *Videnskr. Selsk. Skr.* I. p. 309.]

2. The wedge-shaped stone axes are looked upon as thunderstones. Snoldelev, district of Copenhagen. [Communicated in 1910 by Mr Chr. Christensen, Sallev (D.F.S.).]

3. At Stenmagle, district of Sorö, and in neighbouring villages, old people within living memory carefully collected and kept flint axes which were called thunderstones and were supposed to have fallen from the sky in thunderstorms. [Communicated at Stenmagle in 1908.]

4. The flint axes are here commonly called thunderbolts. Slotsbjergby, district of Sorö. [Communicated in 1909 by Mr Niels Skov (D.F.S.).]

5. The ancient flint wedges (*i.e.* axes) are called thunderstones; if they are in a house the lightning does not strike it. A few persons have also called fingerstones thunderstones. Egeslevmagle, district of Sorö. [Communicated in 1906 by Mr Th. Spange, teacher (D.F.S.).]

6. In the sixties I found in a farm on Höve field two flint axes placed on the inner side of the roof opposite the chimney.

[1] See map at end of book.

The owner allowed me to take one of them, but the other was to remain as a protection against strokes of lightning. In a farm at Smidstrup, in about 1860, a long and beautifully polished flint axe and a dagger were found placed in the same manner. A cottager at Ravnemark, in levelling a small mound, found several stone implements, which he placed under his roof opposite the chimney, next to a stone axe which was already there; they were to act as a protection against thunder, and nobody was allowed to take them down. In a neighbouring house a flint dagger and a large flint axe were fixed in the corresponding place under the roof for the same purpose, and nobody was allowed to take them away. These instances might easily be added to; many flint axes in my collection have been obtained by examining the inner side of the roofs of old houses, near the chimney. Most old people formerly believed quite firmly that they protected the house against "thunder" (*i.e.* strokes of lightning) when they were fixed under the roof or placed near the chimney. After a fire at a neighbouring farm, in about 1870, I found on the site two flint axes, which had been fixed in the roof. These the owner had never allowed to be removed from their place. (All from places in the south-western part of the district of Sorö.) [Communicated in 1909 by Mr Jespersen, landowner, Tranderupgaard.]

7. During a summer's residence at Refsnæs (district of Holbæk) in 1877 or 1878 I visited the peasants in search of stone antiquities. At a farm where I went for that purpose the farmer's wife showed me a stone axe fixed under the thatched roof; but she would not sell it, as, according to her, it protected the house against lightning. [Communicated in 1909 by Mr Peter Köbke, secretary to the city board of Copenhagen.]

8. Near the fireplace stood a box full of flint wedges and the like. They had been found on Thue's allotment. He would not sell them for a "daler" (*i.e.* two shillings) or even more. "It's all the same to me whether I get that 'daler' or not," he said. "I'll keep the thunderstones found on my lot."

Rersö, district of Holbæk. [THORKILD GRAVLUND, *I gamle Essinge By* (1905), pp. 13, 14.]

9. An old woman in western Sealand kept a big thunderstone (*i.e.* a flint wedge) to the day of her death, believing that as long as it was in the house neither lightning nor any other disaster could befall it. [J. KAMP, *Folkeminder*, p. 407, No. 1345.]

10. When the horses are troubled by the nightmare you take a thunderstone, *i.e.* a flint axe or flint wedge, and hang it under the roof over the horses; then the nightmare dare not touch them. Western Sealand. [J. KAMP, *Folkeminder*, p. 188, No. 68.]

11. In August, 1694, Mr P. Syv saw Baron Juel's soldiers open two barrows on Karise field (district of Præstö)...In the tomb were shattered urns, a great number of so-called thunderstones (*i.e.* flint axes and flint knives), and some ordinary human bones. [WORSAAE, *Annaler for nord. Oldkyndighed*, 1844–5, p. 203, from *Samlinger til den danske Historie*, I. 2, p. 117.]

12. In October, 1908, a hollow-ground flint axe was sent to the National Museum, "bought of H. P. in Gammelby (district of Præstö), who found it fixed under the roof of the house he had bought of the cottager C. L."

13. The peasants generally fix the stone wedges (*i.e.* the flint axes) under the ceiling and believe that they act as a protection against lightning. Sværdborg parish, district of Præstö. [H. DUNCAN, *Beretning om et i en hedensk Gravhöj paa Lundtofte Mark nylig fundet Skelet* (Copenhagen, 1840), p. 14.]

14. In 1868 I called on an elderly woman living near Kulsbjærgene, wishing to buy a polished flint axe which I knew she had found. But it was impossible for me to get it. I explained to her that it was a tool from the stone age. The woman told me I wouldn't make her believe that. No, it was a thunderstone, and when they had one in the house the thunder would not strike it. I offered the woman two smaller stones of a similar kind, and still proposed to pay the same for her thunderstone as I had offered her before. To this the

woman answered that it was no good; unless she had found them herself they were of no use. The flint axe had been found by her near an old willow, a short distance from the house; the willow was split, and the woman believed that the thunderstone she found there had been the cause. The stone was in its place on the top of the four-post bedstead.—I know that in several places in the country the so-called thunderstones were either laid down under the floor or immured in the chimney-fireplace, in order that they might act as a protection against the striking of the thunder. Vordingborg country-parish, district of Præstö. [Communicated in 1906 by Mr J. Olsen, Maribo (D.F.S.).]

15. On the island of Bogö, in the district of Præstö, it was the custom to immure thunderbolts (*i.e.* old flint axes) in the walls of a new house. Thus the house was protected against lightning. Or the thunderbolt might be placed under the bed. This was also done in western Sealand....Sometimes the owner of the house kept a similar thunderbolt in an out-of-the-way place, *e.g.* in the thatched roof. [J. KAMP, *Folketroen*, p. 15, No. 61 (MS. in D.F.S.).]

16. An unpolished flint axe was found on September 28, 1868, in an old cobble-wall at Nörrevestud, on the island of Mön. The old man who brought it said that it was formerly believed that when such a stone was built into the wall the house was protected against thunder. [The National Museum, No. A 12863; cf. FR. BOJSEN, *Af Möns Historie*, p. 141.]

17. About 1850, when I was a child, I was often sent out in the fields, after a thunderstorm, by a servant from Kjeldby vicarage (island of Mön) to look for thunderstones; by these were meant flint wedges. [Communicated in 1909 by Mr C. Bågöe.]

18. The ancient flint axes were commonly called thunderbolts in Lolland, and it was said that one had been found under a tree which had been struck by thunder. The flint axes were generally kept on the top of the four-poster or under the eaves; they were supposed to protect the house against strokes of lightning. [Recollections of a sojourn, 1865–9: communicated in 1909 by Mr J. Fugl, Vordingborg (D.F.S.).]

19. On taking up the floor in an old house in Nakskov, Lolland, *c.* 1896, a flint axe was found lying there. People were persuaded that it had been put there for superstitious reasons, without, however, being able to tell exactly why. [Communicated in 1908 by Mr Hans Kjær, assistant at the National Museum.]

20. Ancient stone axes and belemnites protected the house against lightning. Opager in Lolland. [Communicated in 1910, on the ground of a pupil's statement, by Mr S. P. Nielsen, college teacher at Haslev (D.F.S.).]

21. In the island of Bornholm the same belief was held (viz. that the stroke of lightning was produced by the descent of a flint axe); such a flint wedge is there called *ejn dönnesten* (a thunderstone). [J. KAMP, *Folketroen* (see No. 15), p. 16, No. 63. Cf. No. 47.]

22. On the island of Langeland the polished flint wedges are called "thundershots." Every time the lightning strikes it is believed that such a stone comes down. [J. KAMP, *Folketroen* (see No. 15), p. 16, No. 62.]

23. My grandmother always had a thunderbolt (*i.e.* a flint axe) in her bed; it was her firm belief that it protected the house against strokes of lightning, and in those parts many shared the belief at that time (about 1830). Kragholm, near Rudkjöbing, on the island of Langeland. [Communicated in 1909 by Mr Niels Skov, Slotsbjergby (D.F.S.).]

24. The common flint wedges are called thunderbolts, and it is believed that such a thunderbolt falls at every stroke of lightning. The district round Kværndrup, Funen. [*Skattegraveren*, VII. No. 729.] The same belief is recorded from Vejstrup, district of Svendborg [communicated in 1909 by the gardener Niels Fahle, of Værlöse (D.F.S.)], and from Hillerslev, district of Svendborg [communicated in 1909 by Mr F. V. Larsen, land-steward (D.F.S.)].

25. The "Sebedeje"- or "Spardeje"-stones (*i.e.* fossilized sea-urchins) were kept on the milk-shelves to get good cream on the milk. In the same way, the small flint wedges, called thunderstones, were kept on the dairy shelves to act

as a protection against strokes of lightning. North Funen. [CHRISTINE REIMER, in *Kvindernes Blad*, February 22, 1900.]

26. At Söndersö, district of Odense, and the neighbouring villages, the flint axes were commonly called thunderbolts. When an old house was pulled down in Söndersö a flint axe was found lying under the roof on the top of the oven. [Communicated in 1908 by Professor H. A. Nielsen.]

27. In my childhood, in the forties, I often heard thunderstones spoken of, and my parents kept one on the floor under a chest. It was one of the common implements of the stone age called flint wedges. It was thought that they fell down from the sky when the thunder struck, and it was further believed that when one of them was kept in the house the thunder would not harm it. Since my childhood I have not heard thunderstones mentioned. Höjby, district of Odense. [Communicated in 1909 by Mr Peder Nielsen, cottager of Höjby (D.F.S.).]

28. Implements of flint such as axes, knives, weapon-points, etc., are called by the peasantry (in Aasted and Skjærum parishes, Vendsyssel) by the singular name of thunderstones, as they have most likely heard the name mentioned; they believe that these flints, which are not common in these parts, especially when of such a shape, have fallen down in thunderstorms. [Account of December 19, 1808, from Dean S. RÖST, *Antiqu. Annaler*, III. p. 38.]

29. In my childhood's home in Klæstrup (Jerslev parish, district of Hjörring), about 1860, we had a flint axe fixed behind a lath near the rafters to act as a protection against lightning.—A man living in Mellerup, in the same parish, kept a number of stone axes, etc. One of the vicar's sons wished to buy them, but the woman, who was alone in the house, said, "No; as long as we have them we need not insure our house against fire." [Communicated in 1910 by Miss Lovise Hansen, of Dover (D.F.S.).]

29*a*. In Karup parish, district of Hjörring, the ancient flint implements were regarded as thunderstones that protected the house against lightning. [Communicated in 1910 by Mr Mark teacher, of Öster Hornum (D.F.S.).]

30. The ancient flint axes were here formerly regarded as thunderstones. [Communicated in 1908 by Mr J. Kr. Larsen, Ulsted parish, Vendsyssel (D.F.S.).]

31. In Thy, district of Thisted, the various stone age implements—and only these—were formerly called thunderstones. [Communicated in 1910 by Mr Andreassen, late teacher, of Dover (D.F.S.).]

32. From a few persons in this parish (Snedsted, district of Thisted) I have heard that thunderstones are the common flint axes; but I have not been able to trace any superstition whatever in connection with them. The fossilized sea-urchins, which all over Thy are called "palliköer," also pass for thunderstones; they are still placed by some people in the stable windows and over the stable doors, as, according to the belief of old people, they are supposed to contribute to the health of the cattle and to protect them against disease and accidents. Here, however, I have not come across the belief which, I remember, prevailed in my birthplace (Gunderup, near Aalborg); there they were placed on the milk-shelves so that the milk should not turn sour, and some placed them also in the churn to get good butter. [Communicated in 1910 by Mr Ditlevsen, teacher, of Elsted, near Snedsted (D.F.S.).]

32 *a*. The flint implements are called thunderstones by the peasantry, and they believe that it is with such stones that the lightning strikes....Seventeen years ago the lightning struck a peat-house and set fire to it. Fortunately, the fire was immediately extinguished; but as the owners were not successful in their careful search for the thunderstone, the supposed cause of the fire, they feared a fresh outbreak. To keep a thunderstone in the house was considered a guarantee against lightning. Isle of Mors, in the district of Thisted. [C. SCHADE, *Beskrivelse over Öen Mors*, Aalborg, 1811, p. 90.]

33. A crescent-shaped flint saw...was turned up by the plough in the fields of Raakilde farm [in the district of Aalborg]. The wife of the peasant who found it believed that it was a thunderstone, which could avert lightning and bring good luck to the house. [The National Museum, No. MDCXXVIII. of the year 1826; see *Antiqu. Annaler*, IV. p. 579.]

34. As late as about 25 years ago, it happened to me in Himmerland (district of Aalborg), that I could not persuade a man to sell me a flint axe because it had been lying on the hearth of the farm from time immemorial, and in all that time the lightning had not once struck the farm. [Mr Dreyer, district physician, in *Frem*, May 3, 1908, No. 31.]

35. Flint axes have within living memory been regarded as thunderstones; an instance is remembered in which such an axe was kept behind the wainscot as a protection against lightning. Giver, in the district of Aalborg. [Communicated there in 1909.]

35*a*. Flint axes were looked upon as thunderstones; where they were kept the lightning did not strike. Veggerby, in the district of Aalborg. [Communicated in 1910 by Mr Mark, teacher, of Öster Hornum (D.F.S.).]

36. I have borrowed (mark the word) an axe of striking beauty and utility, of a woman in Hammershöy (district of Viborg); it is of red flint, with some veins running through it, well fashioned and polished towards the sharp end; it is over four inches wide, and has once been nine inches long, being nearly pointed towards the end; but its properties are still more remarkable; for a piece of this stone finely pounded and taken in cold water is an unfailing remedy against persistent colic, so the woman who owns it told me. She has tried it on her husband, whom I saw, a man who for twelve months had been a victim to such painful attacks that, though only about thirty years old, he could not go out to work, but lay at home under the care of his poor wife, looking like death itself. In fact, I never thought he could recover. His wife, who saw that all other remedies were useless, remembered the stone she had in her chest, which she firmly believed to be a heaven-fallen thunderstone. As having come from heaven, she believed it must possess not only the generally recognized power of averting the thunder from the house where it was kept, but also other miraculous properties (rather like the old crone who had heard from the clergyman that caraway cured all diseases); she tried pounding a piece of the flint stone about

as large as the yolk of an egg, gave the good man this stiff dose at one draught, and from that time he showed decided signs of recovery, and can now go to work again. If he has a relapse at any time he has recourse to his heaven-fallen powder, and immediately finds relief. [Communication of May 28, 1811, made by Rev. P. BLICHER, of Vorning, now in the National Museum; published by BOYE, in *Museum*, 1894, II. p. 338.]

37. In Balle, near Silkeborg (in the district of Viborg), a man had stuck a flint dagger under the eaves; "they say it helps against the thunder striking, you know." [Communicated in 1910 by Mr R. P. Randlöv, of Taaning (D.F.S.).]

38. In several respects it is advantageous to have a thunderstone in the house; therefore it is carefully kept by the man who finds it. Amongst other things, it protects a house against lightning. The thunderstone or, as it is also called, the thunderbolt, is described as being a sharp stone, a wedge or an axe, that dives with the lightning into the earth, so no doubt it is the same object which scholars assume to be a relic of antiquity. [THIELE, *Den danske Almues overtroiske Meninger*, No. 138.]

Thunderstones (Belemnites).

39. A thunderstone (belemnite), like the burning of lights, protects the unchristened child against being changed by trolls. [JUNGE, *Den nordsiellandske Landalmue*, p. 291 (p. 292: a shoemaker in North Sealand has seven thunderstones in his possession). Junge was vicar of Blouström and Lilleröd, district of Frederiksborg, 1791–1823.]

40. In order to protect the horses against the nightmare "you should immediately hang a long pointed flint stone over them in the stable. It ought really to be a genuine thunderstone" (cf. No. 39). [JUNGE, *loc. cit.*, p. 302.]

41. If you have a fingerstone in the house the lightning will not strike it. Bogö. [JENS KAMP, *Folketroen* (see No. 15), p. 11, No. 41.]

42. Belemnites were formerly commonly called thunderstones. Halsted, in Lolland. [Communicated there in 1909.]

43. The thunderstone is cigar-shaped. Byskov, on the isle of Falster. [Communicated by a pupil of Haslev College, 1910 (D.F.S.).]

44. His father brought "stars" (fossilized sea-urchins) and "thunder-arrows" (fingerstones) home from the fields. Lars was quite sure that the "stars" came down with the shooting stars and the "thunder-arrows" with the lightning. Falster. [F. L. GRUNDTVIG, *Livet i Klokkergaarden*, p. 63.]

45. Fingerstones were called thunder-arrows or thunder-bolts, and were supposed to fall down in a thunderstorm and to contain a diamond inside. Sönder Kirkeby, isle of Falster. [Communicated by Mr Jens Olsen, late farmer, 1909 (D.F.S.).]

46. Fingerstones are called thunder-arrows; they were supposed to fall down in a thunderstorm. Sönder Alslev, isle of Falster. [Communicated by Mr A. J. Rasmussen, bailiff, 1909, (D.F.S.).]

47. *Dönnesten, i.e.* thunderstones (belemnites), were supposed in superstitious times to fall down in thunderstorms. [ESPERSEN, *Bornholmsk Ordbog*.] *Dönna* is the common Bornholmic word for thunder, whereas *torden*, according to Espersen, is only found in a few compounds. Cf. Nos. 21 and 81.

Thunderstones (Echinites).

48. According to a communication made in 1909 by Mr H. Ussing, the fossilized sea-urchins are called thunderstones at Pedersborg and Munkebjergby, district of Sorö, and are supposed to come down from the sky in thunderstorms (D.F.S.). (The author has also heard from a few other parts of Sealand that fossilized sea-urchins were known by the name of thunderstones, but none of these scattered communications suggest any great age.)

49. From elderly people I have learned that in this part (Öster Han division, district of Hjörring) fossilized sea-urchins passed for thunderstones; the belief in them has, however, quite disappeared here. [Communicated in 1909 by Mr P. Petersen, teacher, of Bonderup.]

50. In the parts round Lögstör, in the district of Aalborg, fossilized sea-urchins were regarded as thunderstones; they were supposed to have fallen from the sky in thunderstorms and were believed by some to act as a protection against lightning; they were also laid next to the milk-dishes to prevent the milk from turning sour. The belief in them still exists in many places at the present day. [Communicated in 1909 by Rev. Söe Pedersen, Ranum.] In Öster Hornum, district of Aalborg, echinites were also regarded as thunderstones. [Communicated in 1910 by Mr Mark, teacher, Öster Hornum (D.F.S.).]

51. Fossilized sea-urchins are called thunderstones in Fur, and in other places, *e.g.* in Salling, "sebedæi"-stones or "s'bedæi"-stones. In Fur, old people still cling to the belief that when a thunderstone is laid in a place "where no one can set foot," the house is guarded against strokes of lightning. [Communicated in 1908 by Mr H. P. Kristensen, board school teacher, Copenhagen.]

52. The only stones that pass for thunderstones in these parts (North Salling) are the fossilized sea-urchins, generally called "Sepadeje"-stones. In Himmerland (the environs of Lögstör) in my childhood they were called "pariko," and the general belief was that they fell down from the sky in thunderstorms. [Communicated by Mr Krogh, teacher, Töndering, 1909.]

53. Fossilized sea-urchins were regarded as thunderstones. The peasantry also called them Zebedee stones, more enlightened people meteorolites, but all agreed that they fell down from the sky. When they were kept in the house in an unfrequented place, they protected the house against strokes of lightning; the general custom was, I think, to hide them under the far side of the bed. This we did in Nörbæk, district of Viborg, about 30 years ago. [Communicated by Dr Villads Christensen, 1908.]

54. In my childhood, in the fifties, fossilized sea-urchins were called thunderstones near Fussingö in the district of Viborg. We believed that there was a diamond inside them. [Communicated in 1909 by Mr Tryde, headmaster, Rönne.]

55. In the parts round Davbjerg and Mönsted, in the district of Viborg, people most frequently understood by thunderstones fossilized sea-urchins, or more seldom, flint axes; in the latter

case the fossils were called "spedaje"-stones. Both kinds acted as a protection against thunder. The stone axes were kept on shelves in the sitting-room; the fossils were laid on shelves in the pantry as they "kept the milk fresh and caused plenty of cream." The belief in these stones is said to be extinct, but I have often seen them lying in the above-mentioned places. I have seen the fossils laid in pantries as late as February, 1908. [Communicated by Mr Rambusch, district physician of Sjörup.]

56. Fossilized sea-urchins were called thunderstones or "sebedei"-stones; till about 25 years ago they were believed to have the power of warding off strokes of lightning, and preventing the milk from turning sour in thunderstorms; they were therefore kept on the shelves in the dairy. Jebjerg, parish of Örum, district of Randers. [Communicated in 1909 by Mr P. Kræmer, farmer (D.F.S.).]

57. He who carries a "Zebedee-stone" in his pocket is not struck by thunder. Rönslunde, district of Aarhus. [E. T. KRISTENSEN, *Jysk almueliv*, Tillæg I. (1900), p. 57, No. 445. Cf. BERING LIISBERG, *Kunstkammeret*, p. 184.]

58. In these parts (Salten, district of Aarhus) the fossilized sea-urchins are called either "thunderstones" or "seppedej"-stones. Some say that they fall down in thunderstorms and that it is lucky to have them; where they are kept, lightning cannot strike; therefore they are sometimes laid under the bed. But I should think the belief in their power has now disappeared. [Communicated in 1910 by Mr Sigurd Kristensen, teacher, of Salten (D.F.S.).]

59. In the parish of Taaning (district of Aarhus) the so-called "seppedej"-stones passed for thunderstones. It was thought that the house was free from the danger of lightning if one was thrown on to the thatched roof. The belief in these stones has now apparently disappeared. [Communicated in 1910 by Mr R. P. Randlöv, Taaning.]

60. On the farm where I was born, in Jexen Dale in the parish of Adslev (about 6 miles to the north-east of Skanderborg), my parents had a thunderstone (in those parts we called them "sepedei"-stones) in the locker of an old oak chest that stood in

our best room. One of the earliest recollections of my childhood, is that my parents told us children that we were not to take away the stone, for when we had such a stone in the house the thunder could not strike it (we never said that it was the lightning that struck). [Reminiscences of the early sixties, communicated in 1909 by Mr P. Birkelund, merchant, Aarhus (D.F.S.).]

61. According to a communication received in 1910 through Mr S. P. Nielsen, college teacher at Haslev, echinites pass for thunderstones in the parish of Engbjerg (district of Ringkjöbing); they are also laid among the milk-dishes in order that the milk may give plenty of good cream (D.F.S.).

62. The home of my childhood was in the parish of Stadil in the district of Ringkjöbing. I remember quite clearly that my father kept some fossilized sea-urchins in his bureau. They were called thunderstones and it was believed that where they were kept, the lightning would not strike. For people believed that the thunderstone had really come down in a thunderstorm, and that where it had once struck it was not worth coming again. [Communicated in 1908 by Mr P. Storgaard Petersen, teacher, of He.]

63. Fossilized sea-urchins were called thunderstones. They were believed to fall down in thunderstorms, and if you kept them in the house you were protected against strokes of lightning. The thunderstone was kept on the shelves under the beams. Parish of Henne near Varde. [Communicated in 1908 by Mr N. Gertsen, teacher, of Emb, and Mr Torben Klinting, teacher, of Slebsager. Cf. J. KAMP, *Folkeminder*, p. 407, No. 1344; FEILBERG, *Jysk Ordbog*, *s.v.* Paradisko.]

64. *Æ taarrenstien, i.e.* thunderstones (fossilized sea-urchins), were placed, some inside, and some on top of the locker in the large oak chests in our best room at home, in the seventies. It was believed that they had fallen down in a thunderstorm and that in thunderstorms they could protect the property or objects on which they were laid, nay more the whole of the house and the person who carried one about with him. Lintrup, district of Ribe. [Communicated in 1909 by Mr J. C. Frederiksen, master mason, Præstö (D.F.S.).] The same belief is recorded from Fövling, district of Ribe. [E. T. KRISTENSEN,

Jysk almueliv, Tillæg I. (1900), p. 57, No. 444; cf. also E. T. KRISTENSEN, *Jyske folkeminder*, IX. p. 24, No. 232.]

65. Echinites were formerly generally regarded as thunderstones. Sönder Omme, district of Vejle. [Communicated there in 1909.]

66. Fossilized sea-urchins (and only these) are called thunderstones in the parishes of Smidstrup and Herslev, district of Vejle. [Communicated in 1909 by Mr G. Sarauw.]

66 *a*. A farmer in Klakring (district of Vejle) puts "spådeje"-stones under the roofs of his houses as he believes they act as a protection against lightning. For this reason they are also called "thunderstones." [Communicated in 1910 by Mr Fr. Holm, teacher, of Klakring (D.F.S.).]

67. Thunderstones were fossilized sea-urchins. I never heard other stones called thunderstones. At the stroke of lightning such a stone, in a glowing state, fell down and brought the fire with it. Only when a crashing thunderclap followed the lightning did we think that a stone had fallen, and it was precisely its fall and great speed which produced the crashing sound. In all other cases the stone remained in the thundercloud. Such a stone acted as a protection against lightning ("the thunder would not strike where it was"). The stones were therefore collected and carried home. They were put everywhere as safeguards, both in the house and the out-houses, in a window or on a shelf, on a beam or in a corner, but they were not made much of and in most cases were covered by dust and cobwebs. Notably large or fine specimens were laid on the chest as a decoration. One often carried a small stone about, as a protection, when out in a storm. I myself for many years carried a couple of stones in my pocket and felt fairly safe in a thunderstorm; I did this even after I had learned at school what the stones really were. Vonsild near Kolding. [Communicated in 1908 by Mr Andr. G. Jensen, headmaster of Flemming school.]

68. In Skjærbæk, in the north of Slesvig, 12 miles south of Ribe, and the adjacent villages, fossilized sea-urchins are generally called thunderstones. [Communicated in 1908 by Professor H. A. Nielsen.]

69. The thunderstones (fossilized sea-urchins) were believed to avert lightning; they were put on the top of the clock and in various places about the house—even in the loft under the roof. The house was shielded and we felt fairly safe and well protected with them near us while the storm lasted. When these stones were damp (when they "sweated" as we said) it was always a sure sign that a storm was coming on, and as long as the stone "sweated," we children were if possible kept at home. Thunderstones laid in the pantry prevented cream and milk from turning sour too quickly. Abild, North Slesvig, 26 miles south of Ribe. [Communicated in 1909 by Mr Clemens Sönnichsen, Ballum (D.F.S.).]

70. "Thunderstones" was the name given to fossilized sea-urchins in my childhood and this is still the case in Toftlund and adjacent parishes, and here too in the parish of Gram. In my childhood the common popular belief was that these stones were found in places that had been struck by lightning. They were carefully collected and kept because the general belief was that lightning would not strike a house where such a stone was kept. As a child (I was born in 1864) I myself believed this, and on the farm where I was born we had several thunderstones at that time. North Slesvig—Toftlund 16 miles south-east of Ribe, Gram 10 miles east of Ribe. [Communicated in 1910 by Rev. J. Zerlang, Gram.] A similar belief is recorded from Branderup (20 miles south-east of Ribe) and from Vellerup (22 miles south-east of Ribe) in North Slesvig (D.F.S.).

71. Fossilized sea-urchins were in the greater part of Denmark believed to have the power of preventing accidents, due to witchcraft, in the churning (a witch could take the "butter-luck" away from people), and diseases amongst the cattle; they were also placed on the milk-shelves to make the milk give good cream. Their names in the different parts of the country are as follows: *marmorsko, marrimusko, paradisko* (Vendsyssel), *paddeko* (environs of Holstebro), *spadejesten* or *spådejesten* (Vrads and Hjelmslev divisions), *sebedæjsten* (environs of Horsens and other places, cf. Nos. 25, 51–53, 55–60), *spadæje* (Sejerö), *smördie* (South Funen), *smörsten* (western Sealand), *smörlykke*

(Tingerup, near Hvalsö). On this point see: JENS KAMP, *Folkeminder*, p. 407, No. 1344; p. 204, No. 156; *Skattegraveren*, IX. p. 44, No. 158; E. T. KRISTENSEN, *Danske Sagn*, VI. 2, p. 181, No. 603; THORSEN, *Sejerö*, p. 176; THIELE, *Den danske Almues overtroiske Meninger*, No. 241; O. WORM, *Museum Wormianum*, p. 76; Feilberg's Dictionary, *s.v. Kjæmpeknap, marmorko, paradisko, smörlykke.* On the etymology of spadej- or sebedej-stone, see Feilberg's Dictionary, *s.v. spådejesten*, and Kalkar's Dictionary, *s.v. bodejesten, spadej* (where older sources concerning the relation of the stone to milk and cattle are also given).

Thunderstone (Species of Stone not mentioned).

72. When you have a thunderstone in the house, a troll can never dare to enter it. [HOLBERG, *Uden Hoved og Hale* (play produced in 1725), I. 6.]

Stone Antiquities in later Finds; Stone Axes with Runic Inscriptions.

73. We have a number of communications to the effect that stone axes and other antiquities of the stone age have been found in graves together with burnt bones. This, if true, would serve as an illustration of the statement in the later Edda that Thor consecrates Balder's funeral pyre with Mjölnir. But there is uncertainty about all the supposed finds, and it may be taken for granted that the same applies to the foreign material of a similar kind cited in the following works: ENGELHARDT, *Mémoires des antiquaires du Nord*, 1872–7, pp. 284 *seq.*; VEDEL, *Bornholms Oldtidsminder og Oldsager*, pp. 250–1; VEDEL, *Efterskrift til Bornholms Oldtidsminder og Oldsager*, p. 111; MONTELIUS, *Sveriges forntid*, I. (1874), pp. 145, 158; RYGH, *Aarb. for nord. Oldkynd.* 1877, pp. 180–1 (Norwegian finds); SOPHUS MÜLLER, *Die nordische Bronzezeit und deren Periodenthcilung* (1878), pp. 61–64; R. BELTZ, *Die vorgeschichtlichen Altertümer des Grossherzogtums Mecklenburg-Schwerin* (1910), index, *s.v. Steingeräte.*

74. Pierced stone axe (lost in 1859 at the destruction by fire of Frederiksborg Castle); on the side four runes were carved: depicted in *Mémoires des antiquaires du Nord*, 1850–60, p. 28; MONTELIUS, in *Sveriges forntid*, p. 159, rightly doubts its genuineness.

75. Fragment of a battle axe with runes, said to have been found in Kirke-Hvalsö, district of Copenhagen: depicted in CARTAILHAC, *L'âge de pierre*, p. 34, fig. 19. The runes have no doubt been engraved in quite modern times.

76. Axe with runes (?), said to have been found in the parish of Jellinge, district of Vejle: depicted in CARTAILHAC, *L'âge de pierre*, p. 35, fig. 20. The "runes" are probably of modern date.

Echinites in Danish Finds belonging to the Early Ages.

77. Echinites have possibly been found with antiquities before, but as they frequently occur in natural deposits throughout the country, no importance has been attached to this fact. During the excavations carried on under the auspices of the National Museum in recent years, echinites have several times been found in positions which can hardly be altogether accidental. Over the middle of a sunken grave of the bronze age in a mound near Sönder Omme (district of Vejle), which was excavated in 1909, an echinite was found in a position which suggested that it had originally been placed on the heap of stones that covered the grave. In a deposit from the later bronze age near Voldtofte in Funen a couple of echinites were found. Two more were found in 1907 on the western part of the site of a house of the pre-Roman iron age, near Kraghede, district of Hjörring. They lay close together in the actual deposit containing the antiquities and the remains of the house which had been destroyed by fire. Thus they would seem to have been placed (as thunderstones) in the house, or possibly under the roof; a similar explanation may account for the above mentioned echinites from Voldtofte.

78. In some Danish finds of the earliest centuries A.D. we have echinites furnished with a metal loop for use as amulets. Most probably they have been looked upon as thunderstones: see

F. SEHESTED, *Fortidsminder og Oldsager fra Egnen om Broholm* (1878), pp. 161 *seq.*, pl. 35 *r*, *u*, *v*, *x* (grave from the Roman period). Fig. 33 is a reproduction of an echinite set in two flat bronze bands, crossed and twisted to a loop at the top, no doubt of the same period as that mentioned above. It was found in the loose earth by a farmer, Rasmus Jörgensen of Breininge (Lolland), and presented by him to the National Museum in 1909. Some further instances, from various periods, are mentioned in a paper by the author to be published in *Festskrift til H. F. Feilberg* (1911).

Fig. 33.

The Classical Thunderweapon on Danish and German Antiquities.

79. On one side of a bone arrowhead from Vimose the svastika and the figure ⅃⊢[are carved; see ENGELHARDT, *Vimose Fundet*, p. 23, fig. 24. This figure is very like another inlaid in silver on an iron spearhead from Müncheberg (Brandenburg) together with the svastika, the triquetrum, a crescent-shaped figure and the runic inscription RANINGA: reproduced in WIMMER, *Die Runenschrift* (1887), p. 61; HENNING, *Die deutschen Runendenkmäler*, pl. 1, fig. 2; *Photograph. Album der præhistor. Ausstellung*, Berlin, 1880, IV. pll. 13–14; *Zeitschr. f. Ethnologie*, 1886 (292), and several other places. [For a discussion of a modern imitation in the Museum at Torcello which for a number of years was considered genuine by several scholars, see HENNING, *loc. cit.*, p. 21; *Zeitschr. f. Ethnologie*, 1883 (520); (546), pl. IX.; *ib.*, 1885 (157); *ib.*, 1886 (295); *ib.*, 1890 (83). In 1884 it was seen not to be genuine by WIMMER, *Die Runenschrift*, p. 57, note 4; *id.*, *Mémoires de la soc. roy. des antiquaires du Nord*, 1890–5, p. 233; cf. *Revue archéol.*, 1884, II. pp. 54–71.] On a similar spearhead with the runic inscription TILARIDS from Kovel (Volhynia) we find, together with several other figures, a sign which by some is supposed to be a degenerate form of the lightning design; see HENNING, *loc. cit.*, pl. 1, fig. 1; *Album der præhistor.*

Ausstellung, IV. pll. 13–14, cf. *Z. f. Eth.*, 1885 (159); cf. WIMMER in *Mémoires de la soc. roy. des antiqu. du Nord*, 1890–5, p. 229. Finally, on some combs from the find at Vimose, we have a combination of lines, probably of a purely decorative character, which seems to be derived from the shape of the lightning design on the arrowhead in the same find: see ENGELHARDT, *loc. cit.*, pl. 2.

"Thor's Hammers" from the Viking Age.

80. Small "Thor's hammers" of silver were worn fairly commonly as charms in the Viking age, most frequently hanging from a necklet. The objects of this kind that have been found in Denmark are recorded, and the older reproductions of them cited, in HENRY PETERSEN, *Nordboernes Gudedyrkelse og Gudetro*, 1876, pp. 75 *seq.* The specimen which is there (p. 75, note 3) referred to as having no number, is a fragment belonging to a silver find from Aalborg. Among the objects mentioned by Henry Petersen, the "Thor's hammer" from Knudsker has since been depicted in *Nordisk Konversationslexikon, Illustrations-supplement, Nordiske Oldsager*, pl. XI. fig. 10; the two hammers from Römersdal in VEDEL, *Bornholms Oldtidsminder og Oldsager*, figs. 390–1; the fine hammer from Mandemark in *Aarb. f. nord. Oldk.*, 1876, p. 125, fig. 9; SOPHUS MÜLLER, *Ordning af Danmarks Oldsager*, No. 657; the same, *Vor Oldtid*, plate facing p. 668; the necklet from Sejerö (see fig. 31, p. 59) is shown in WORSAAE, *Danish Arts*, p. 199. Only one fresh "Thor's hammer" has appeared in Denmark, of simple design and much worn by long use; it belongs to a large silver find exhumed at Gravlev in the district of Aalborg in 1904. The amber pendant depicted in *Aarb. f. nord. Oldk.*, 1881, p. 145, is in too poor a state of preservation to enable us to determine its form. A mould for Thor's hammers has been found in Egholm in the Great Belt, depicted in *Aarb. f. nord. Oldk.*, 1900, p. 190. As a sacred token the hammer is carved on the runic stones at Læborg, district of Ribe, and Hanning, district of Ringkjöbing, twice on the stone at Læborg: WIMMER, *De danske Runemindesmærker*, II. pp. 41 and 293. On a silver bracelet of the Viking age (where it was found is not known)

nine T-shaped figures are engraved; they cannot be simple ornaments, but may with more reason be regarded as symbols of the "Thor's hammer," placed there as tokens of good omen: WORSAAE, *Danish Arts*, p. 198, fig. 239. On a similar bracelet from the silver find of Vela, Norway (see below), we find a less careful representation of four hammers joined crosswise: *Aarsberetning fra Foren. til norske Fortidsmindesm. Bevaring*, 1885, pl. 3, fig. 18 *a*. On the isle of Amrum a miniature hammer of iron, probably a charm used for the same purpose as those mentioned above, has been found in an urn-grave: MESTORF, *Vorgesch. Alterthümer aus Schleswig-Holstein*, fig. 735. A "Thor's hammer" of tin or bronze, the greater part of which immediately crumbled to pieces, is said to have been found in a grave near Immenstedt, Holstein: MESTORF, *loc. cit.*, fig. 736; *Mittheil. des anthropol. Vereins in Schleswig-Holstein*, I. p. 12, fig. 5. From Norway we know of three finds of small "Thor's hammers": one in the silver find from Braatveit, district of Stavanger: RYGH, *Norske Oldsager*, No. 679; a ring with two hammers in the silver find of Vela (Ryfylke): *Aarsberetn. fra Foren. til norske Fortidsm. Bevaring*, 1885, p. 76, pl. 3, fig. 17; and a ring with nine "Thor's hammers" of iron in the find from Hilde, district of Nordre Bergenhus: *Bergens Museums Aarbog*, 1903, No. 3, p. 28, fig. 7; GUSTAFSON, *Norges Oldtid*, fig. 525; SCHETELIG, *Vestlandets ældste Kulturhistorie*, 1909, p. 79, fig. 109. For the corresponding objects from Sweden, some richly ornamented and of much finer workmanship than the Danish or Norwegian objects, see MONTELIUS, *Les temps préhistoriques en Suède*, p. 297, and *Kulturgeschichte Schwedens*, p. 313; *Vitterhets-, historie- och antiqvitets akademiens månadsblad*, 1882, p. 103, fig. 39; 1895, p. 102, fig. 82; *Fornvännen*, 1908, p. 269, fig. 141 (ring with about twenty Thor's hammers of iron); *Bidrag till Södermanlands äldre Kulturhistoria*, XIV. (1909), p. 46, fig. 84, and other places.

81–85. Sweden.

81. Name and nature of the thunderstone.

HYLTÉN-CAVALLIUS, *Wärend och Wirdarne*, II. p. 222: the lightning is a "wedge of stone, thrown by Thor or Gofar, and is still often found in the places where the thunder has struck";

its names are *thorvigge* (Wärend), *thorenvigg* (Uppland, cf. RIETZ, *Dialektlexikon*), *thorvig* (Medelpad, Ångermanland; Rietz: Götaland, Småland, district of Nyland in Finland), *godviggen* (Nerike, cf. No. 82), *thornkilen* (Dalarne, Gotland; Rietz: *thornskil* from Gotland), *thorkil* (Ångermanland), *gofarskilen* (Helsingland), *thorensten* (Helsingland), *thorsten* (Medelpad), *gomorsten* (Skåne). [Cf. II. tillägg, p. ix.] *Ibid.* II. tillägg, p. x.: "In the parish of Rydaholm, Finveden, the thunderbolt is also mentioned by the name of thunder-arrow."—*Oskpil* (*i.e.* thunder-arrow) = stone antiquities: district of Nyland in Finland: *Nyland*, IV. p. 106.—*Åskviggar*, *i.e.* "thunderbolts," according to Dalin's Dictionary is the common name for "wedge-shaped stones (of flinty slate, serpentine, greenstone, etc.), belemnites, and rock crystals which are sometimes found in the fields, on and beneath the surface of the ground, and are believed by the peasantry to have been hurled down with the lightning."—STOBÆUS, *Opera* (Dantisci, 1753), p. 127, gives the following names for belemnites: *thordöns kolf -pihl* (*i.e.* thunder-arrow), *-wigge* (*i.e.* thunderbolt), and *wätte-ljus*, and says that the usual qualities of the thunderstone are attributed to them.—Other natural stones ("längliche platte dreieckige Steine, wie Schleifsteine, oder auch dreieckige schwarze metallische Steine, wahrscheinlich Schwefelkies") pass for thunderstones (*bisaviggar*, *bisikúla*) on the islands off the coast of Esthonia: RUSSWURM, *Eibofolke*, II. p. 248.—DALIN, *Svensk ordbok*, says that *thorvigg* in South Sweden also means "lightning, flash of lightning"; likewise Rietz: *thornvigg* in Götaland (cf. the modern Greek meaning of ἀστροπελέκι [114]).—*Govigg*, see No. 82; *marestenar*, *smördubbar*, *godbondestenar*, stones worn by water, see No. 83.

82. Popular conception of the thunderstone.

Govigg is the usual name for old stone weapons, most frequently flint chisels, those relics from the stone age which are so often found in the ground. The popular belief is that whenever "the thunder strikes," such a chisel comes down with the lightning [*a*], buries itself seven fathoms deep in the earth [*b*], and gradually rises until it comes to the surface again in the

seventh year. Not until seven years have passed can it come to light again, and it is useless to dig in a place where thunder has struck, in the hope of finding the stone, for each time the spade is put in the ground the stone sinks down a corresponding distance and cannot be found before the seven prescribed years have passed [*c*]. Many wonderful qualities are attributed to such thunderstones. A piece of one, pounded fine in a stone mortar, is regarded as a remedy for rheumatism [*d*]. A thunderbolt, laid in a heap of flour, makes the flour last longer and frightens away rats [*e*]: RIETZ, *Svenskt dialektlexikon*, from Nerike.

a. Both flint axes and pierced axes are regarded as thunderbolts: Södra Tjust division (Småland): recorded by T. Hj. Cullberg, 1891 [communicated by Dr N. E. Hammarstedt, Stockholm].—Stone axe: Edsberg (Nerike): *Fornvännen*, 1906, p. 236, No. 12834. Stone axe and whorl: Refteled (Småland): *ib.* p. 270, No. 12953.

b. Cf. MONTELIUS, *Sveriges forntid*, p. 160, from Gotland.

c. Gotland, see *b*. *Oskpilen, i.e.* the thunder-arrow, comes to the surface seven or nine years after "the thunder has struck": district of Nyland: *Nyland*, IV. p. 106. Nuckö and Vorms: RUSSWURM, *Eibofolke*, II. p. 248.

d. Pieces of the thunderstone are pounded and used for cattle diseases: Blekinge: MONTELIUS, *Sveriges forntid*, p. 161; cf. G. A. ALDÉN, *I Getapulien* (*i.e.* Småland), pp. 124 and 143 (cited by FEILBERG, *Jysk ordbog*, under *stenredskab*); the stone is used in various ways to make the cattle thrive (*e.g.* placed over the stable door; or pounded and given as a preventive against disease; inflamed udders are also stroked with it): Södra Tjust division (Småland, see *a*). Laid in the watering trough: isles off Esthonia: RUSSWURM, *Eibofolke*, II. p. 249.

e. Flint knife kept in the granary: Vermland: LIGNELL, *Beskrifning öfver grefskapet Dal*, I. p. 65 (cited by MONTELIUS, *loc. cit.*). In the corn bag or corn bin: district of Nyland: *Nyland*, IV. pp. 77 and 106. In sowing: isles off Esthonia: RUSSWURM, *Eibofolke*, II. p. 249. Hung in the brewing vat "to prevent the trolls from spoiling the brew": Gotland: MONTELIUS, *Sveriges forntid*, p. 160; put in the beer

to aid fermentation: Gotland: *Antiqv. Tidsskrift*, 1852–4, p. 262.

f. Acts as a protection against lightning: MONTELIUS, *Sveriges forntid*, p. 160 (Gotland); therefore immured in the house: MONTELIUS, *loc. cit.* Isles off Esthonia: RUSSWURM, *Eibofolke*, II. p. 249.—Flint dagger which according to the information given about its discovery must have been immured in the wall of a church in Skåne: STOBÆUS, *Opera* (Dantisci, 1753), p. 156, pl. 6.

g. Acts as a protection against trolls: NICOLOVIUS, *Folklivet i Skytts härad*, p. 180; Refteled (Småland), see *a*.

h. Acts as a protection against fire; hence used at the burning of "svedjeland," *i.e.* at the clearing of forests by fire: Jönköping district: MONTELIUS, *Sveriges forntid*, p. 161; G. A. ALDÉN, *I Getapulien* (*i.e.* Småland), p. 144, cited by FEILBERG, *Jysk ordbog*, under *stenredskab*; Södra Tjust division (Småland, see *a*).—If you ride three times "against the sun" round a fire, especially a forest fire, with a thunder-arrow, the fire will not spread: district of Nyland: *Nyland*, IV. p. 106.

i. Attracts good luck; therefore used as a sinker on fishing-nets; a peasant in Vermland thought he had observed "that the fish came with greater readiness into those nets for which stone axes were used as sinkers": MONTELIUS, *Sveriges forntid*, p. 161.

k. Used as an amulet against illness; pierced axe fastened round the neck of a child as a remedy for "ältan" (*i.e.* ague): HAZELIUS, *Afbildningar af Nordiska Museet*, Småland, pl. 11, No. 41. Used as a cure for toothache (by touch) and other complaints; butter, melted with a heated "thunder-arrow," is eaten or smeared on the sore place; portions of the "thunder-arrow" are pounded and taken: district of Nyland: *Nyland*, IV. p. 107. The patients drank milk in which a stone axe had lain: Edsberg (see *a*).

l. Hung over the stalls of the horses as a protection against the nightmare: Båhus district. [Communicated by Dr N. E. Hammarstedt, Stockholm.]

m. The thunderstone turns quite red when there is a storm in the air: islands off Esthonia: RUSSWURM, *Eibofolke*, II. p. 249.

83. STOBÆUS, *Opera* (Dantisci, 1753), pp. 119–121, has the names *marestenar* and *smördubbar* for the echinites, and says that they were used as a protection against the nightmare (cf. No. 82 *l*) and accidents in the churning (cf. No. 71). Pp. 132 *seq.*: natural pierced flints are called *marestenar* (*i.e.* nightmare stones) and are hung in the stables and round the necks of the cattle. P. 133: in the north of Sweden stones worn round and oval by water pass for thunderstones and are called *godbondestenar*. On p. 133 an incident is further related which shows that the notion of the thunderstone was not exclusively associated with certain particular kinds of stones: 1735 vir quidam religiosus hic in Scania degens...mihi lapidem quendam rotundum, tuberculis nonnullis muricatum, qui...et figura et magnitudine gallam refert,...misit, simulque litteris significavit, illum esse in trunco arboris a fulmine tactae a lignatoribus ipsius repertum et sibi oblatum; verum minus equidem mihi dubitandum reor, quin servi fallaces, ut majus pretium dono suo ab hero curioso et credulo conciliarent, mira haec commenti sint.

84. Pierced stone axe, found in the beginning of the eighteenth century in Uppland; on the side is a row of runes; both ends are knocked off (possibly by the use made of it, mentioned in Nos. 82 *d* and 36); reproduced in *Antiqv. Tidsskrift*, 1852–4, pp. 260–1; MONTELIUS, *Kulturgeschichte Schwedens*, p. 67, fig. 99.

85. Pierced stone axe with carved Romanesque ornaments; found in West Gothland: MONTELIUS, *Kulturgeschichte Schwedens*, p. 68, fig. 100.

86–89. Norway.

86. In 1750 Fr. Arndtz, dean of Sundfjord and vicar of Askevold, sent a small, round stone to Bishop Pontoppidan, and wrote of it, "The peasants say that thunder shoots down such stones, and as their old idea is that thunder strikes the trolls who would otherwise destroy the world, they have formed the idea that these stones are the shot it uses." They are found where the ground has been torn up by lightning; the largest of them resemble hen's eggs in shape and size. E. PONTOPPIDAN, *Norges naturlige Historie*, I. p. 285.

87. Common people formerly had queer notions about thunderstorms. They had no fear of the lightning, for it never caused fire. It often happened that a house or tree was struck by lightning, but it did not catch fire—it was only split. Thunder (*Toren*), on the other hand, inspired many people with fear. But neither the thunder nor the lightning was the chief agent at work in a thunderstorm, but stones which shot down from the sky, the so-called *torestene* (*i.e.* thunderstones). It was the thunderstone which shivered houses and trees without setting them on fire. The thunderstone is a whitish-grey, long oval stone, in shape like a hen's egg. Sometimes one was lucky enough to find them after a thunderstorm. As such a find was rare it was deemed correspondingly lucky, for the thunderstone was regarded as a powerful amulet for the prevention and cure of various diseases; in fact, it is kept as such by a few old people to this day. Everyone knew what caused the thunder; it was simply that trolls were at large and the thunder therefore came and hurled thunderstones at them to destroy them. One of my boatmen, during a sail on Nordfjord, told me the following tale. On a fine summer morning he had got up early, and going out into the yard, had looked up across the country-side. To his great surprise he saw a number of trolls in the fields. They looked almost like pigs and were gambolling about merrily. But it was not long before the thunder came on violently. It struck the trolls in their midst; they in terror scampered about in all directions to find their way into their holes again. Now one, now another dived into his hole. When no more trolls were in sight the thunder ceased. The man at once went off to the place where the trolls had appeared in order to find thunderstones, but he had no fortune. From the neighbourhood of Stat on the west coast of Norway. [Communicated by Aug. Koren, chief physician, in a special number of the *Morgenbladet*, June 28, 1896 (D.F.S.).]

88. *Torelod* (or *torestein* or *dynestein*), smooth, rounded stones, formerly believed to be produced by the lightning: Nordhordland, Söndfjord, Ryfylke, Söndhordland, Hardang, Voss, Sogn: Aasen's and Ross's Norwegian dictionaries. In

Norway, as in Denmark, it is the thunder that strikes (*tora slær*), see the dictionaries quoted, *s.v.* *tor* and *tora*[1].

89. *Toreblöyg* (*toleblei, i.e.* thunderbolt) is given by Sophus Bugge as the name for stone axes in Smaalenene and Vestfold (district of Jarlsberg and Larvik) in the Appendix to ROSS, *Norsk ordbog*, p. 995.

90–92. Iceland.

90. *Skruggustein* (*i.e.* thunderstone). Ef maður hefir hann, sér maður út um alla veröld; hann kemr úr lopti ofan í þrumum, og hefir þaðan nafn sitt: JÓN ÁRNASON, *þjóðsögur*, I. p. 654.— This is no doubt the only record we have of thunderstones in Iceland; neither in Jón Árnason's manuscript collection nor in the other folk-lore manuscripts in the National Library of Reykjavik do we find any reference to them. For this communication I am indebted to Professor Pálmi Pálsson, to whom I applied, as I was struck by the fact that we knew so little about the thunderstone idea in Iceland, where other old traditions are so well preserved. This is, however, explained by the atmospheric conditions. Mr Pálsson writes, "Here in Iceland a thunderstorm is so rare a phenomenon that several years may pass without one being heard of." Mr Pálsson has kindly made enquiries, on my behalf, about the thunderstone ideas in the different parts of Iceland, and from most places he has received the answer that nothing is known about them; a few of the communications received seemed to him to imply that the idea was of a later date, and had "presumably entered through literary channels as late as the seventeenth century."

91. It is uncertain how far the stones referred to in mediæval literature as used for various magical purposes, have had any connection with thunderstones. See *e.g.* the old Christian law in Grágás (from 1123), chap. 18 (in cod. Arnamagn. 334 fol., ed.

[1] Two stones on Mee-aas farm in Telemarken were up to the 18th century an object of worship and on Thursday nights were washed, smeared with butter and placed on the high settle. They have by several authors been regarded as thunderstones, though nothing is said about this in the old records of them: WILLE, *Sillejords Præstegield* (1786), p. 46. Cf. J. M. LUND, *Beskrivelse over Över-Tellemarken* (1785), p. 235.

1879; in other MSS., ed. 1852 and 1883, the chapter has other numbers): Menn skulu eigi fara með steina eða magna þá til þess at binda á menn eða fénað. Ef maðr trúir á steina til heilindis sér eða fé sinu ok varðar þat fjörbaugsgarð. Weather magic: þorsteins þáttr bœjarmagns, *Fornmanna sögur*, III. p. 180. Magic arrows of stone that kill where other magic arrows are of no avail: *Örvaroddssaga* (Boer's ed.), p. 140. Victory stones: *Didrik of Bern's saga* (Unger's ed.), chaps. 118 and 120, etc.

92. "Thor's hammers" of stolen bell-metal were in use at exorcisms until quite recently in Iceland ("when you wished to put out the eye of a thief"): JÓN ÁRNASON, *þjóðsögur*, I. p. 445. MAURER saw a specimen as late as 1858 which had belonged to an old woman skilled in magic, at Húsavík: *Isländische Volkssagen der Gegenwart*, p. 101; cf. *Z.f.E.*, 1894 (319). As is shown by the magic words employed, this belief is derived from the Asa-belief and has no direct connection with the idea of the thunderstone.—For another supposed use of the "Thor's hammer" see Fritzner's Dictionary, 2nd ed., I. p. 715.

93–95. Germany.

93. Literature (the works marked with an asterisk have not been accessible to the author).

Z. f. E. (*Zeitschrift für Ethnologie*), 25 (522), (554), (558)–(564); 28 (362).

K. BARTSCH, *Sagen, Märchen und Gebräuche aus Mecklenburg*, II., Wien, 1880.

BIRLINGER, *Volksthümliches aus Schwaben*, I., Freiburg, 1861, p. 194.

P. DRECHSLER, *Sitte, Brauch und Volksglaube in Schlesien*, II., Leipsic, 1906.

A. HAAS, *Rügensche Sagen und Märchen*, 2nd ed., Stettin, 1896, pp. 157 *seq.*

* H. HARTMANN in Pick's *Monatschrift für die Geschichte Westdeutschlands*, VII., Trier, 1881, pp. 167–9.

* K. SEIFART, *Sagen aus Hildesheim*, II. p. 187.

L. STRACKERJAN, *Aberglaube und Sagen aus dem Herzogthum Oldenburg*, I.

Westphälisches Magazin, herausgegeben von P. F. Weddigen, III. 1787.

94. Popular belief in thunderstones.

a. Stone axe, not pierced (or axe whose shape is not accurately stated). Westphalia: *Westphäl. Mag.*, III. p. 713; *Z. f. E.*, 25 (561). Heligoland: *Z. f. E.*, 25 (522). Spessart (Bavaria): *Z. f. E.*, 25 (563). Ritzebüttel (Hamburg): *Z. f. E.*, 25 (561). East Prussia: *Z. f. E.*, 28 (362). Lenzen an der Elbe (?): *Zeitschr. des Vereins für Volkskunde*, IX. (1899), p. 226. Elsass: *Revue archéol.*, 1866, I. pp. 295 *seq.*; *Comptes rendus de l'ac.*, LIX. (1864), p. 713. Brunswick: ANDREE, *Braunschweiger Volkskunde* (1901), p. 411.

Pierced stone axe. Polnisch-Breile: *Z. f. E.*, 32 (380). Masuren (East Prussia): *Z. f. E.*, 25 (559). Spessart (Bavaria): *Z. f. E.*, 25 (563). Rügen: *Z. f. E.*, 25 (559). Altmark: *Z. f. E.*, 25 (560). Oldenburg: STRACKERJAN, I. p. 66, No. 75. Silesia: DRECHSLER, p. 104.

b. Belemnite. Mecklenburg: *Z. f. E.*, 25 (562). Rügen: HAAS. Rügen, Pomerania, Siebenbürgen: *Z. f. E.*, 25 (562). Elsass: *Comptes rendus de l'ac.*, LIX. (1864), p. 713. Brandenburg: *Z. f. E.*, 9 (472).

c. Echinite. Pomerania: *Z. f. E.*, 25 (563); *Baltische Studien*, 36, p. 183. Oldenburg (called *Grummelstein*): STRACKERJAN, I. p. 66, No. 75. Rügen: HAAS.

d. Other stones, egg- or ball-shaped. Swabia: BIRLINGER.

e. Names. *Donnerstein, donnerkeil*, generally. *Dunnerpil*: Mecklenburg: *Z. f. E.*, 25 (562). *Dunnerpiler*: Rügen, Hither Pomerania: *ib.*; Rügen: HAAS. *Duderkiel, pillersteen*: Prussia: ANDREE, *Parallelen*, II. p. 32. Middle High German: *schûrstein*, etc.: J. GRIMM, *Kleine Schriften*, II. p. 425; *Deutsche Mythol.*, 4th ed., I. p. 149.

f. The thunderstone falls down with the lightning: Hanover: *Z. f. E.*, 25 (560). Heligoland: *Z. f. E.*, 25 (523). Brunswick: ANDREE, *Braunschw. Volkskunde* (1901), p. 411. Only found where the lightning has struck; if a man is killed by lightning, he has been hit by a thunderstone: Rügen: HAAS.

g. The thunderstone penetrates far down into the earth (seven fathoms), and rises a fathom every year. Pomerania: *Baltische Studien*, 36, p. 182; similarly in Elsass: *Revue archéol.*, 1866, I. p. 296; Silesia: DRECHSLER, p. 137; Swabia: BIRLINGER. Rises a little every year: Westphalia: *Z. f. E.*, 25 (563); sinks as deep into the ground as the loftiest steeple is high, approaches the surface every time it thunders, and comes up again after seven years: *Westphäl. Mag.*, III. p. 713; comes up after nine or seven years: Mecklenburg: BARTSCH, p. 205, No. 1004.

h. Condition of the thunderstone when thunder approaches. It perspires (cf. *l*): Westphalia: *Westphäl. Mag.*, III. p. 713; *Z. f. E.*, 25 (561). It moves: Westphalia: *Z. f. E.*, 25 (561); East Prussia: *Z. f. E.*, 25 (559); Goslar: G. E. RUMPHIUS, *De amboinsche Rariteit-Kamer* (1741), p. 209, 8.

i. Acts as a protection against lightning[1]. Rügen: *Z. f. E.*, 25 (559); HAAS. Hanover: *Z. f. E.*, 25 (560). Westphalia: *Westphäl. Mag.*, III. p. 713. East Prussia: *Z. f. E.*, 28 (362). Mecklenburg: *Z. f. E.*, 25 (562); BARTSCH, p. 205, No. 1005. Brandenburg: *Z. f. E.*, 9 (472). Altmark: *Z. f. E.*, 25 (560). Spessart (Bavaria): *Z. f. E.*, 25 (563). Pomerania: *Z. f. E.*, 25 (563); *Baltische Studien*, 36, p. 362. Oldenburg: STRACKERJAN, I. p. 66, No. 75. Elsass: *Revue archéol.*, 1866, I. p. 296 (preserved as a valuable treasure for more than 100 years!). Brunswick: ANDREE, *Braunschweig. Volkskunde* (1901), p. 411.

k. The use of the thunderstone as a protection against lightning. Immured in the foundations of the house: Greifswald: *Z. f. E.*, 25 (554). Immured in the house: Westphalia: *Z. f. E.*, 25 (561); R. BELTZ, *Die vorgeschichtlichen Altertümer des Grossherzogtums Mecklenburg-Schwerin*, p. 47. Placed in the roof: at Greifswald: *Z. f. E.*, 25 (559); Martha's Hof in Bonn: *Bonner Jahrbücher*, 77, p. 216. Hung up in the chimney: Polnisch-Breile: *Z. f. E.*, 32 (380). Swung round and forcibly hurled against the door: East Prussia: *Z. f. E.*, 25 (559); HELWING, *Lithographia Angerburgica* (1717), p. 85 (cf. FRISCHBIER,

[1] Dasselbe [*i.e.* protection against lightning] bewirkt eine Kohle von einem durch Blitz entzündeten Hause, die man im Hause aufbewahrt; auch trägt man eine solche zum Schutz gegen den Blitz bei sich: Visbek (Oldenburg): STRACKERJAN, I. p. 66, No. 75.

Hexenspruch und Zauberbann, Berlin, 1870, p. 107; M. TOEPPEN, *Aberglaube aus Masuren*, Dantzic, 1867, p. 37).

l. Protection against fire; test of genuineness. A genuine thunderstone protects a thread wound round it against being burnt: East Prussia: *Z. f. E.*, 28 (362), cf. *Z. f. E.*, 25 (561); Lenzen an der Elbe (?): *Zeitschr. des Vereins f. Volkskunde*, IX. (1899), p. 226 (a peasant performed the experiment in the presence of the informant and would not sell the stone axe); Silesia: DRECHSLER, p. 137.

m. A protection against trolls. Neighbourhood of Hamburg (placed in the roof): *Z. f. E.*, 25 (561). Pomerania: *Baltische Studien*, 36, p. 182. Silesia: DRECHSLER, p. 137. Brandenburg: *Z. f. E.*, 9 (472).

n. Protects little children. East Prussia: *Z. f. E.*, 25 (559); HELWING, *Lithographia Angerburgica* (1717), p. 85.

o. Used in the dairy. Rügen: *Z. f. E.*, 25 (559); (564); HAAS.

p. Cures cattle. Pomerania: *Baltische Studien*, 36, p. 183. Inflamed udders are milked through the hole in the stone axe: East Prussia: *Z. f. E.*, 25 (559); HELWING, *Lithographia Angerburgica* (1717), p. 85. Inflamed udders: Elsass: *Revue archéol.*, 1866, I. p. 295; Silesia: DRECHSLER, p. 104.

q. Diseases cured by stroking the affected part with the thunderstone. Tumours: East Prussia: *Z. f. E.*, 28 (362). Warts: Pomerania: *Baltische Studien*, 36, p. 362. Wounds, tumours: Silesia: DRECHSLER, pp. 137, 289, 292.

r. A powder scraped from it cures disease. Westphalia: *Z. f. E.*, 25 (561). Altmark: *Z. f. E.*, 25 (560). Rügen: HAAS. Mecklenburg: BARTSCH, pp. 106, 394 and 112, 428.

s. Carried by the sower in the seed basket. Silesia: DRECHSLER, p. 56.

t. In curses and imprecations: "sô slahe mich ein donerstein," "dat di de hamer sla," "bim hamer," etc.: GRIMM, *Deutsche Mythol.*, 4th ed., I. pp. 149 *seq.*, III. p. 68. In southern Germany "Himmelsdonnerkeil" is still a common curse.

95. Axe of greenstone (fig. 34) belonging to Mr Albert Petersen of Lyngby (Denmark); formerly in the collection of the late painter Kyhn (printed catalogue No. 117), 20 centimetres long. Two cross-grooves are cut round the axe, one in the middle and one near the butt-end; across the end itself is a cross-shaped groove, and on one side between the cross-grooves an engraved figure representing a tree with seven branches with a line drawn across at the bottom; the figure suggests considerable age. On the other side of the axe is a corresponding figure, shield-shaped, with a cross in the middle, possibly engraved at a later date. The tree-like figure represents the so-called "donnerbesen" which is known to have been used in recent times as a protection against lightning in Holstein, Vierlande, near Hamburg, and neighbouring parts. A figure formed out of bricks exactly like the one engraved on the axe is frequently found in these districts, inlaid in the gables and walls of farm-houses dating back to about 1600; *Z. f. E.*, 1889 (184); 1890 (77), fig. 2; 1890 (554). Possibly the stone axe (it is not known where it was found) comes from the same parts; at all events it is hardly Danish. That it has been regarded as a thunderstone is quite clear from the carving of the "thunder-besom."

Fig. 34.

96–115. Other countries of Europe.

96. **Austria-Hungary** (Germans and Magyars; for the Slavonic parts see Nos. 100–2).—*a.* The rock crystals fall from the sky when it thunders and are therefore called *tunderstandlan*: Lesach valley in Carinthia: *Zeitschr. f. deutsche Mythologie*, III. p. 29.—Whenever the lightning strikes without producing fire, a thunderstone dives deep down into the earth; not until the ninth year does it come to the surface again: Siebenbürgen: WLISLOCKI, *Volksbrauch und Volksglaube der Siebenbürger Sachsen* (1893), p. 98.—Thunderstones (belemnites), immured in

the house, guard it against lightning: Siebenbürgen: WLISLOCKI, p. 114.—In Hungary stone axes (pierced or otherwise) are supposed to come down with the lightning; they are called "god's arrows" (*Ifteu injila*), or "flat lightning" (*lapos mennyko*), and are used as amulets and for magical cures: FL. RÒMER, *Congrès préhist. de Paris*, 1867, p. 327.

b. Ancient monuments.

Near Deva in Siebenbürgen two reliefs dating from the Roman empire have been found, representing a god carrying a short-handled hammer, and a goddess; the hammer-wielding god has been regarded as a god of the subterranean world (this is also sometimes the case with the Greek Ζεὺς Καταιβάτης), and is accompanied by the dog Kerberos: *Bull. des antiquaires de France*, 1892, pp. 140 *seq.* It is evidently a deity whose worship was celebrated in the district where it was found, but it is not known to which people this cult belongs.

97. **Switzerland.**—ALOIS LÜTOLF, *Sagen, Bräuche und Legenden aus den fünf Orten Lucern, Uri, Schwiz, Unterwalden und Zug* (Lucerne, 1862), p. 385: Vom Blitz und Donner sollen die Krystalle entstehen, drum nennt man sie am Gotthard "Strahl" und die grosse Höhle in der Sandbalm zu Göschenen heisst davon Strahlenloch.—J. J. WAGNER, *Hist. natur. Helvetiæ* (1680), p. 325: Crystall, Alpinis Straalen vel Straalstein id est fulminis lapis dicta, eo quod sibi persuasum habeant a fulmine eum cadere ac gigni. *Ib.* p. 320: Silex perforatus. Bubulci superstitiosi sibi persuasum habent quod si vaccæ loco lactis sanguinem reddant, papillis vero in hæc foramina immissis mulgeantur, lac corrigi, unde et vulgo eum vaccinum lapidem, einen Kühstein, appellant.

98. **Lithuania** (cf. No. 94: East Prussia).—The belemnite is called *Perkuno akmu* (*i.e.* Perkun's stone or thunderstone); still one also hears of *Perkuno kulka* (thunderball, *i.e.* a ball-shaped stone), and the name is similarly used of pierced stone axes. The thunderstone darts down with the lightning, comes to the surface again after seven days, guards the house against lightning, prevents the milk from turning sour, and is used as a cure for diseases: MANNHARDT, *Z. f. E.*, 1875, p. 294.—Two

stone axes have been found fixed in the trunks of ancient oaks (Perkun's holy tree), one right under the bark: East Prussia: *Z. f. E.*, 28 (362).

99. **The Wends in Lausitz.**—A stone axe is called *nevjedraskovy kamen* (*i.e.* storm stone): *Mittheil. anthropol. Ges. Wien*, XVI. p. 152, where SCHULENBURG, *Wendische Volkssagen* (Leipsic, 1880), p. 270, is cited.—Amulets fashioned like stone axes (the so-called "Schrecksteine") are worn by children as a protection against evil: *Z. f. E.*, 1877 (450), cf. No. 94 *n.*

100. **Bohemia.**—The thunder strikes the earth in the shape of a ball; this ball makes one invisible: GROHMANN, *Abergl. aus Böhmen und Mähren*, I. No. 209. The thunder is a glowing stone as large as a walnut, placed under the timbers of the roof as a safeguard against lightning: *ib.* No. 210. Thunderbolts and dead men's bones are used in the exorcism of disease: *ib.* No. 1087.

101. **Moravia.**—The stone axes are called *kámen hromovy* (*i.e.* thunderstone); they fall down from the sky with the lightning, penetrate far into the earth, come to the surface again after seven years, are preserved in houses as an heirloom, cure warts, boils, and disease by stroking, and heal inflamed udders; powder scraped from them is used as a cure; a blow from a thunderstone instantly kills a man: *Mittheil. anthropol. Ges. Wien*, XII. pp. 159 *seq.*

102. **Slavonia.**—A stone axe is called *strelica* (*i.e.* arrow) or *nebeska strelica* (*i.e.* sky arrow). The spot where the lightning strikes is sacred and is generally enclosed by Mahometan Slavs. The thunderstone brings good fortune and its loss is unlucky: KRAUSS in *Mittheil. anthropol. Ges. Wien*, XVI. p. 152. Cf. *Z. f. E.*, 26 (197).

103. **Poland** (cf. No. 94: East Prussia).—Flint axes are thunderstones; when a new building is erected they are laid under the threshold as a protection against lightning: ANDREE, *Ethnographische Parallelen und Vergleiche*, II. p. 34.—Flint arrowheads (*i.e.* thunderstones) are used as a help for women in labour: Cracow: *Revue des traditions populaires*, VI. p. 36.

104. Russia.—Stone antiquities are called thunder-arrows; they are preserved by the peasants as treasures which are handed down to their children; water in which they have lain is used as a cure: district of Varnavinsk in province of Nijni Novgorod: *Revue Archéol.*, 1878, II. p. 257.—In villages in the province of Tula the peasants have many stone antiquities (mostly arrowheads and spearheads that are called thunder-arrows), especially the old women, who use them for magic cures: the patient is pricked with the point of the arrow, or drinks water in which it has lain, or the sore place is bathed with this water. In every village there is "a wise woman" who performs these ceremonies. Stone antiquities are therefore preserved as great treasures; fossilized mussels, too, and other objects are occasionally regarded as thunderstones. A 90-year-old woman in the village of Fedjaschevo was the owner of six stone implements (among them two or three spearheads) which she had brought with her in her youth as an heirloom from her home in the province of Voronesh: POLJAKOV in *Beiträge zur Kenntniss des russischen Reiches*, 2. Folge, 8. Bd. (1885), pp. 131 *seq.*—The peasants in the province of Minsk call the lightning "Perun's arrows": *Rev. trad. pop.*, XXII. p. 345.—Among the Little Russians the body of a man who has been killed by lightning is not dressed in a shroud but buried as it is; the deceased, it is said, must enter into the presence of the Lord in the state in which he was unexpectedly called away: *ib.* p. 346. Evidently this is a Christian adaptation of the same very ancient custom that is known from ancient Greece [115 *e*] and Rome [115 *d*].—Among the Little Russians the belemnites are called thunder-arrows; they are formed deep in the earth where the lightning has struck and come to the surface after seven days, seven months, or seven years; they protect the house against lightning; water in which they have lain heals disease: *ib.* p. 351.

105. The Esthonians.—ANDREE, II. p. 34, cites BOECLER-KREUTZWALD, *Der Esten abergläubische Gebräuche*, St Petersburg, 1854, p. 115.

106. Finns and Laplanders.—The lightning is Ukko's arrows (fire arrows, copper arrows): *Kalevala*, XXXIII. 264 *seq.*—

For the thundergod of the Laplanders and his attributes (hammer, bow, flint), see FRITZNER, *Historisk tidsskrift*, IV. (Kristiania, 1877), pp. 146 *seq.*; G. V. DÜBEN, *Om Lappland och Lapparne* (1873), pp. 229 *seq.* The rainbow is called by the Laplanders "Thor's bow" and is regarded as the weapon of the thundergod: V. DÜBEN, p. 228 (from a written statement by Sam. Rehn, 1671). A smaller reproduction of the same sacrificial table as is given in fig. 32 from the above mentioned manuscript by Rehn, is found in V. DÜBEN, p. 288, fig. 72. A scene of worship in front of a similar sacrificial table is given in SCHEFFER, *Lapponia* (1674), p. 105. Magic drums with pictures of the thundergod are reproduced in J. A. FRIIS, *Lappisk Mythologi* (1871).—The Laplanders in the north of Sweden and Norway are also familiar with the thunderstones. When I was living among them in 1907–8, I accompanied the Kareruando tribe from the mountains on our last spring journey into Norway. My landlady, Ani, then went up to a small sand-ridge and began looking for thunderstones (*Bajan-gæðge* in Laplandish). Her old mother-in-law had mentioned that they were found especially in this place. We searched and found several. They were the worthless garnets which are fairly common there. Ani said that they fell down in thunderstorms and that they instantly killed the man they hit. The stone itself was as a rule small, but strong. A sore place could be immediately healed by pressing one of the stones against it. Only a few of the Laplanders knew of this belief in thunderstones; it is apparently disappearing from memory. The small sand-hill where the thunderstones were found lies on the Norwegian side of the border mountains, somewhat above the forest line, about eight miles from the inner end of Balsfiord in a south-easterly direction from Tromsö. [Communicated in 1909 by Miss EMILIE DEMANT, Selde: D.F.S.]

107. **England and Scotland.**—Stone axes are called thunderbolts or thunder axes, fall from the sky during thunderstorms, are kept in houses as a safeguard against evil, and are employed as remedies especially against disease amongst cattle: EVANS, *Stone Implements*, 2nd ed., pp. 56 *seq.*—Belemnites are

called thunderstones: TYLOR, *Early History of Mankind*, p. 223.—A stone axe was put up over the house-door "for good luck," the original notion of the thunderstone being only faintly discernible: Argyleshire: *Proc. Soc. Antiq. Scotland*, XXIV. (1890), p. 379.—Stone axe regarded as a "thunderbolt"; keeps all evil away from the house: Shetland: *ib.* XII. (1878), p. 599.—Meteorolite, 3½ feet long, fell in Devonshire in 1622; regarded as a thunderstone: G. E. RUMPHIUS, *De amboinsche Rariteit-Kamer* (1741), p. 209, 12.—The Gaelic name for the thunderbolt, *peileir-tarnainaich*, really means "thunderball."

108. **Holland.**—Stone axes are called *donderbeitel*, *donderkeil*, *dondersteen* (see dictionary).—There is a large thunderstone, 1½ feet thick (a meteorolite?) in the church in Grave: G. E. RUMPHIUS, *De amboinsche Rariteit-Kamer* (1741), p. 209, 6.—The peasants let sick cattle drink water in which a thunderstone has lain; women stroke swollen breasts with the stone: *ib.* pp. 210 *seq.*

109. **Belgium.**—In several places in Feluy-Arquennes the flint arrowheads are called *pointes des fées*, the flint axes, *pierres à tonnerre*: *Revue des traditions populaires*, VIII. p. 249.—In the province of Limbourg belemnites are regarded as *pierres de tonnerre*; the peasants assert that they are found in hollow trees and are thrown down there by the lightning: *ib.* XVII. p. 416.—Flint axes and other flint antiquities are regarded as *pierres de tonnerre* and may be found immured in houses as a protection against lightning: *Bulletin de folklore* (Bruxelles), II. p. 1; III. p. 9, Nos. 67–68.—*Brabantsch Sagenboek door A. de Cock en Is. Teirlinck* (1909), p. 222: "de dondersteen is gevallen," *i.e.* the lightning has struck; cf. *ib.* p. 182.

110. **France.**—*a.* Recent popular belief. Stone axes are called *coins de foudre* or *pierres de tonnerre* or similar names in the greater part of the country; in the neighbourhood of Bayeux, however, and possibly in other places, belemnites pass for thunderstones (*clous de tonnerre*): *Rev. trad. pop.*, VIII. p. 304.—They are laid under the foundations of the house or under the threshold as a protection against lightning; they protect the people who carry them against lightning; the peasants in Landes carry flint arrowheads about them as amulets against thunder:

P. SÉBILLOT, *Le folklore de France*, I. (Paris, 1904), p. 104.—A cow is killed by lightning in the field, the peasant digs up the earth round it and finds the thunderstone, a small green stone axe: Isle of Sark (near Guernsey): *Rev. trad. pop.*, X. p. 660.—Spatangus complanatus (sea-urchin), fort commun aux environs de Tarascon (Bouches-du-Rhône), est regardé comme un préservatif contre la foudre, pourvu que l'on ait la précaution de faire passer une de ces "pierres de St-Pierre" par-dessus le toit de la maison que l'on habite: *Bull. de la soc. de Borda*, 1894, p. 158.—In the French Alps the stone axes are called *peyros del tron* (*i.e.* thunderstones) or *peyros de la picotto*; the latter name is given them because they are hidden in the stable or in the wool of a ram, and used as a preventive against skin disease among the sheep: *Bull. de la soc. de l'anthrop.*, 1874, pp. 686 *seq.*—Similar use, as a protection for the cattle, in different places in southern France: CARTAILHAC, *L'âge de pierre*, pp. 19 and 73.—In Aveyron the peasants say that the thunderstone sinks six feet into the earth and rises one foot every year: CARTAILHAC, *loc. cit.*, p. 15.—In the Gironde the thunderstone is said to sink nine feet down: *Rev. trad. pop.*, XXI. p. 122.—Placed in the roof as a protection against lightning: Puy-de-Dôme: *Matériaux pour l'hist. de l'homme*, 1875, p. 291.—When a peasant finds a stone axe, he buries it deep down in the earth: Gironde: CARTAILHAC, *L'âge de pierre*, p. 22.—When a storm is coming on, an axe (of iron) is carried into the yard, as a protection against lightning and hail, and is laid edge upwards near the threshold of the house, the door of which is shut: Beuvray: CARTAILHAC, *loc. cit.*, p. 73.—When the lightning had struck, the spot was visited and an attempt was made to dig out the thunderstone; if it was not to be found, the place was marked, as the thunderstone comes up to the surface after seven years and can then easily be found. The thunderstone protects the house against lightning and brings good luck: Pays de Luchon (Pyrénées): *Bull. de la soc. de l'anthrop.*, 1879, p. 164.—In the neighbourhood of Dax the stone axes are regarded as thunderstones and buried under the threshold as a protection against lightning: *Rev. trad. pop.*, V. p. 245.—Il existe à Chaize-le-Vicomte, à l'entrée d'une prairie éloignée de toute habitation, une pierre que l'on prétend être

tombée du ciel. Ayant la forme d'une boule, de mémoire d'homme, elle n'a jamais été déplacée, celui qui se chargerait de cette besogne devant mourir : *Rev. trad. pop.*, XXI. p. 171.—For further particulars concerning the French thunderstones, see *Rev. trad. pop.*, V. p. 245; XXI. pp. 1 *seq.*, 122 *seq.*, 167 *seq.*, 291 *seq.*; *Bull. de la soc. de l'anthrop.*, 1879, p. 169, etc.

b. Ancient Gaul.—The worship of Sucellus, a god armed with a long or short-handled hammer, was widely spread: SAL. REINACH, *Bronzes figurés de la Gaule romaine*, pp. 137 *seq.*; *Mémoires de la soc. des antiqu. du Nord*, 1902, pp. 12 *seq.*; *Jahrb. der Gesellsch. f. lothring. Gesch. und Altert.*, VII. (1895), pp. 128–163.—On autonomous gold coins from the district of the Bajocasses (the peninsula on which Cherbourg stands) we see depicted in front of a man on a war chariot a missile hammer with a short handle, tied to a long winding string; the picture is supposed to represent the same hammer-armed deity : *Revue celtique*, I. p. 7; LA TOUR, *Atlas de monnaies gauloises*, No. 6931; A. BLANCHET, *Traité des monnaies gauloises*, I. p. 153, fig. 3. As the picture of the hammer was small, and it seemed possible that it had not been correctly represented, the author applied to Mr Adrien Blanchet, who kindly assured him that the reproductions were perfectly correct.—A series of Gallic and Gallo-Roman altars bear the figure of a hammer : SAL. REINACH, *loc. cit.*, pp. 184 *seq.* On one of these is seen a large hammer crowned by three smaller ones placed thus $\overset{\text{III}}{\top}$: *Gazette archéol.*, 1887, p. 309. It has been remarked several times in this study that representations of the lightning, as might naturally be expected, are often doubled or repeated several times. This has been held to account for the curious attribute borne by some Gallic gods: SAL. REINACH, *loc. cit.*, pp. 156 and 175.

III. **Spain.**—*a.* Recent popular belief. Stone axes are called *piedras de rayo* (*i.e.* lightning stones): *Archiv f. Anthrop.*, XIV. p. 153.

b. Ancient Spain.—SUETONIUS, *Galba*, 8 : Non multo post (*i.e.* after the arrival of Galba in Hispania Tarraconensis in 60 A.D.) in Cantabriæ lacum fulmen decidit, repertaeque sunt duodecim secures (metal axes ?), haud ambiguum summi

imperii signum.—CLAUDIANUS, *Laus Serenæ*, 77: Pyrenæisque sub antris ignea flumineæ legere Ceraunia Nymphæ.—APOLLINARIS SIDONIUS, *Carm.* v. 49: Naves Hispania defert fulminis et lapidem.

112. **Portugal.**—Rock crystals are called by the peasantry *pedras de raio* (*i.e.* lightning stones): *Rev. trad. pop.*, XVI. p. 606. —In Fayal (Azores) there is a belief that wherever lightning strikes, the thunderbolt buries itself in the earth, to rise again after seven years; and that anyone who happens to be standing over the spot at that time will be struck dead: *Folk-Lore*, XIV. (1903), p. 142.

113. **Italy**; recent popular belief.—The stone axes are generally regarded throughout the country as thunderstones; cf. *Archivio per l'antropologia*, IV. p. 17 (Castelluccio, in the Apennines); stone axes and arrowheads of flint: *Rev. trad. pop.*, 1890, p. 219.—With the lightning a stone descends which after seven years, seven months, and seven days comes up again out of the earth into which it has sunk: Friaul: *Rivista delle tradiz. popol. ital.*, I. (1893), p. 218.—Neighbourhood of Milan: *Archivio per lo studio delle tradiz. popol.*, VI. (1887), p. 231.—The thunderstone (*pedra de tronu*) is for seven years sinking into the earth and takes seven years to come to the surface again; it is a protection against lightning; *ascia de raju* (*i.e.* lightning axe) is a common imprecation: Sardinia: *Archivio per lo studio delle tradiz. popol.*, XV. (1897), pp. 254 *seq.*—When a thunderstorm accompanied by hail came on in the afternoon, the guide said to me, "You have brought the storm on us by showing us the thunderstones ('i fulmini') you have in your pocket": BELLUCCI, *La grandine nell' Umbria*, pp. 17–18.—The thunderstone darts seven spans into the earth and rises a span every year; when a peasant finds one he dare not touch it for fear: Calabria: *Archiv f. Anthrop.*, XIII. p. 336 (where a treatise by Lovisato in the *Boll. delle scienze naturali*, N. 3, ann. III., Trieste, 1878, is quoted); cf. *Matériaux pour l'hist. de l'homme*, 1873, p. 433 (where, however, eighteen years is the time stated).—Flint arrowheads pass for thunderstones; they sink with the lightning seven palmi (*i.e.* nearly seven feet) into the earth, rise one palmo every year, and after

seven years come to the surface again; the proof of genuineness is that a thread wound round one will not burn when the stone is put into the fire; they protect the house and the neighbouring houses against lightning, are hung as charms round the necks of little children, and are preserved as great treasures: Valle della Vibrata (near Ascoli Piceno): *Archivio per l'antropologia*, I. p. 465, pl. 13, 8.—BELLUCCI, *L'Anthropologie*, XX. p. 32, states that in southern and central Italy globular stones and especially all black stones are also looked upon as thunderstones (cf. No. 115 *a*).

114. **Greece**; recent popular belief.—Ἀστροπελέκι (*i.e.* "sky-axe") is used as the name both for strokes of lightning and for stone axes: Φίνλαϋ, Προϊστορικὴ ἀρχαιολογία, p. 5; BERNH. SCHMIDT, *Volksleben der Neugriechen*, p. 32; the same, *Griech. Märchen*, p. 131.—The stone axe is formed in the earth where the lightning has struck; 40 days pass before it is fully formed (?); it is used for various superstitious purposes and is handed down as a treasure from father to son: DUMONT, *Rev. Arch.*, 1867, I. p. 358.—In *Alexias*, III. p. 94 D, we already find the modern Greek word: ἀστροπελέκυν (*sic*) δεδεμένον μετὰ χρυσαφίου, sent as a present from Alexios to the emperor Henry IV

115. **Ancient Italy and Greece** (cf. No. 111 *b*). *a.* (Ceraunia, ombria, brontea, etc.) PLINY, *Nat. hist.*, XXXVII. 134: Est inter candidas et quæ ceraunia vocatur, fulgorem siderum rapiens, ipsa crystallina, splendoris cærulei, in Carmania nascens. Zenothemis fatetur albam esse, sed habere intus stellam coruscantem, fieri et hebetes ceraunias quas in nitro et aceto maceratas per aliquot dies concipere stellam eam quæ post totidem menses relanguescat.—135: Sotacus et alia duo genera fecit ceraunias, nigras rubentisque, similes eas esse securibus, ex his quæ nigræ sint ac rotundæ sacras esse, urbes per illas expugnari et classes, bætulos vocari, quæ vero longæ sint ceraunias; faciunt et aliam raram admodum Magorum studiis expetitam, quoniam non aliubi inveniatur quam in loco fulmine icto.—176: Ombria quam alii notiam vocant, sicut et ceraunia et brontia cadere cum imbribus et fulminibus dicitur eundemque effectum habere, præterea hac in aras addita libamenta non amburi.—The other

passages in Latin authors where the Ceraunia is mentioned are collected in *Ann. dell' inst.*, 1867, pp. 6 *seq.* A comprehensive account of the later literary tradition, which was in the main founded on the passages adduced from Pliny, has been given by PAUL COGELS, *Céraunies et pierres de foudre, Bull. de l'acad. roy. d'archéologie de Belgique*, 1907, IV. pp. 1–406. In Danish literature of the seventeenth century these theories about thunderstones are put forward by J. L. WOLFF, *Diarium* (1648), II. pp. 116–122, and O. WORM, *Museum Wormianum*, pp. 74–77.

b. (Stone antiquities used as amulets and charms.) Stone axe, pierced in order to be worn as an amulet, belonging to a grave-find from the Mycenæan age from Phaistos in Crete (see fig. 10 in the text): *Mon. antichi*, XIV. pp. 616 *seq.*, fig. 75.—A stone axe encircled by an iron band was found in the very ancient "stipe votiva" from Norma (Latium): *Notizie degli scavi*, 1909, p. 257, fig. 23.—Stone axe as an amulet on a necklace, grave-find from Narce (Faliscan district): fig. 16 in the text; see *Mon. antichi*, IV. p. 490.—Axe of serpentine set in a Greek gold setting from sixth century B.C., in the find from Vettersfelde (fig. 6 in the text): previously published by FURTWÄNGLER, *Der Goldfund von Vettersfelde* (1883), pp. 10 and 40, pl. 1, fig. 3.—Amulets with magic inscriptions, made of stone axes which had been sawn through, in a find from Pergamon (fig. 5 in the text), cf. R. WÜNSCH, *Antikes Zaubergerät aus Pergamon* (1905), pp. 16 and 40, pl. 4.—Nephrite axe with gnostic inscriptions dating from the later days of the ancient world, British Museum: *Archæol. Journal*, XXV. p. 104; EVANS, *Stone Implements*, 2nd ed., p. 61, fig. 11; MONTELIUS, *Sveriges forntid*, p. 161, fig. 131, and various other places.—Axe of serpentine from Greece, with engraved figures (Mithras, etc.) and Greek inscription: *Matériaux pour l'histoire de l'homme*, IV. p. 9; CARTAILHAC, *L'âge de pierre*, p. 29 (see also fig. 14); PERROT, *Histoire de l'art*, VI. p. 119, fig. 5.—Several ancient imitations of stone-age axes in semi-precious stones (cornelian, agate, amethyst) are extant, presumably of the Roman period: see *Matériaux pour l'histoire de l'homme*, VII. pp. 221 *seq.*; *Vitterhets-, historie- och antiqvitetsakademiens månadsblad*, 1901–2, p. 111, No. 11453. An object of this kind is preserved in the collection of classical antiquities in the National

Museum.—Stone axe found on the breast of the skeleton of a Christian woman, Epiphania, whose tomb in a catacomb at Syracuse dated back to about 350 A.D.: ORSI in *Römische Quartalschrift für christliche Alterthumskunde*, IX. (1895), p. 476, pl. 2, fig. 1.—Etruscan amulets, made of flint arrowheads (similar to the modern amulets in use in Italy, Scotland and Ireland): *Annali dell' inst.*, 1877, p. 169; CARTAILHAC, *L'âge de pierre*, figs. 31–33; *Brit. Mus. Photo.* (Mansell), No. 25.—The oldest example known to the author is a flint arrowhead, 0·023 long, which has had a bronze thread wound round it, from an Umbrian grave near Terni (Necropoli dell' Acciajeria) excavated in the autumn of 1909; the date of the grave is indicated by a fibula contained in it whose shape is like that shown in fig. 13, pl. II. of MONTELIUS, *Italie*, I.; the find, which has not yet been published, is kept in the Museo Nazionale de Villa Giulia, whose director, Dr Colini, kindly brought it to my notice. In a somewhat later find from Capena (tomb 33, in the same museum) there is a flint arrowhead in a case of bronze; for other examples see: *Mon. antichi*, IV. p. 361, pl. 9, fig. 60 (Narce); p. 498 (Narce); XV. p. 168, pl. 13, fig. 6 (Rome); *Notizie degli scavi*, 1902, p. 324 (Mazzano Romano); MONTELIUS, *La civilisation primitive en Italie*, I. p. 385, No. 8.

c. (Various ideas about thunderstones.) JOANN. LYDUS, *De ostentis*, 45: Οὐ πλέον πέντε ποδῶν κατακρύπτεσθαι κεραυνὸς πέφυκεν εἰς γῆν, ἐξωθούμενος ἄνωθεν.—PLINY, *Nat. hist.*, II. 146: Nec umquam quinque altius pedibus descendit in terram.—CASSIUS DIO, LIX. 28, 6: (Caligula) Ταῖς τε βρονταῖς ἐκ μηχανῆς τινος ἀντεβρόντα καὶ ταῖς ἀστραπαῖς ἀντήστραπτε· καὶ ὁπότε κεραυνὸς καταπέσοι, λίθον ἀντηκόντιζεν, ἐπιλέγων ἐφ' ἑκάστῳ τὸ τοῦ Ὁμήρου (*Iliad*, XXIII. 724) "ἤ μ' ἀνάειρ' ἢ ἐγώ σέ."—PORPHYRIUS, *Vita Pythagoræ*, 17: Κρήτης δ' ἐπιβὰς τοῖς Μόργου μύσταις προσῆει ἑνὸς τῶν Ἰδαίων Δακτύλων, ὑφ' ὧν καὶ ἐκαθάρθη τῇ κεραυνίῳ λίθῳ, ἕωθεν μὲν παρὰ θαλάττῃ πρηνὴς ἑκταθείς, νύκτωρ δὲ παρὰ ποταμῷ ἀρνειοῦ μέλανος μαλλοῖς ἐστεφανωμένος.

d. (The Etrusco-Roman *procuratio* after strokes of lightning.) J. MARQUARDT, *Römische Staatsverwaltung*, III. 2nd ed., pp. 262–3; K. O. MÜLLER, *Die Etrusker*, revised by Deecke, II. pp. 165–180 (on the Etruscan lightning theory).—LUCAN, I. 606:

Arruns dispersos fulminis ignis colligit et terra tacito cum murmure condit, datque locis numen.—Schol. PERS., II. 27: Bidental dicitur locus sacro percussus fulmine, qui bidente ab haruspicibus consecratur, quem calcare nefas est. II. 26: In usu fuit, ut augures vel haruspices adducti de Etruria certis temporibus fulmina transfigurata in lapides infra terram absconderent, cujus in paratione rei oves immolabantur.—FESTUS (PAULUS), p. 69: Fulguritum id quod est fulmine ictum, qui locus statim fieri putabatur religiosus, quod eum deus sibi dicasse videretur.—AMMIAN. MARCELLIN., XXIII. 5, 13: Hoc modo contacta loca nec intueri nec calcari debere fulgurales pronuntiant libri.—PLINY, *Nat. hist.*, II. 145: Hominem ita (*i.e.* by lightning) exanimatum cremari fas non est, condi terra religio tradidit (The same custom was practised in Greece).—Roman "lightning graves" have been found both in Italy and elsewhere. Such a grave at Nîmes is described as masonry of small freestones, four feet long, and about fifteen inches high and wide, covered with stone slabs and on the east side bearing the inscription FVLGVR | DIVOM | CONDITVM: *Corp. Inscr. Lat.*, XII. 3048. Two others are described from earlier sources by MOMMSEN in *Berichte der sächs. Gesellsch.*, 1849, p. 292; one of them (in Rome) was similar in shape and size to that described above, sunk in the earth with a funnel-like opening to the surface. Inscriptions from lightning graves in different parts of the Roman empire, with reference to the finds in question, are given in *Corp. Inscr. Lat.*, II. 2421; VI. 1, 205–6; VII. 561; IX. 1047; X. 40, 1603, 6990; XII. 1047, 2769, 2888, 2970, 3023, 3047–9, 4100; XIV. 245.

e. (Measures adopted by the Greeks in the event of strokes of lightning, etc., cf. pp. 13 *seq.*) Places where the lightning had struck were called *ἠλύσια* or *ἐνηλύσια*; they were *ἄβατα*, *i.e.* they were not to be set foot on and were therefore enclosed; they were consecrated to *Ζεὺς Καταιβάτης* (*Καππώτας*) and provided with altars on which offerings were made. POLLUX, IX. 41: *Ἐνηλύσια, οὕτως ὠνομάζετο εἰς ἃ κατασκήψειε βέλος ἐξ οὐρανοῦ...καὶ τὸν Δία τὸν ἐπ' αὐτῷ Καταιβάτην· περιειρχθέντα δὲ τὰ ἐνηλύσια ἄψαυστα ἀνεῖτο*; cf. *Etymol. Magnum*, 341, 5; 428, 40; HESYCH., *s.v. ἠλύσιον*.—ARTEMIDOR., *Oneirokrit.*, II. 9:

Ο κεραυνὸς τὰ μὲν ἄσημα τῶν χωρίων ἐπίσημα ποιεῖ διὰ τοὺς ἐνιδρυμένους βωμοὺς καὶ τὰς γινομένας ἐν αὐτοῖς θυσίας.—PAUS., V. 14, 10: Τοῦ δὲ Καταιβάτου Διὸς προβέβληται μὲν πανταχόθεν πρὸ τοῦ βωμοῦ φράγμα.—PAUS., IX. 12, 3: Τοῦτον (*i.e.* τὸν Σεμέλης θάλαμον) δὲ καὶ ἐς ἡμᾶς ἔτι ἄβατον φυλάσσουσιν ἀνθρώποις.—This idea has been expressed in comic form by Anaxippos in his Κεραυνός: ATHENÆUS, X. 417 *a*.—Several inscriptions in places struck by lightning are extant: Διὸς Κα[τ]αιβάτο[υ] ἄβατον (Acropolis: Δελτίον ἀρχαιολ., 1890, p. 144), Διὸς Κεραυνῶ (Mantineia: *Monuments Grecs*, I. 4, 23), etc. (see MARTIN P. NILSSON, *Hermes*, 1908, pp. 313 *seq.*).—The body of a man killed by lightning was buried in the place where it was found: ARTEMIDOR., *Oneirokrit.*, II. 9: Οὐδὲ γὰρ οἱ κεραυνωθέντες μετατίθενται, ἀλλ' ὅπου ἂν ὑπὸ τοῦ πυρὸς καταληφθῶσιν, ἐνταῦθα θάπτονται.—Several passages in ancient Greek literature assert that lightning would make people mad; without doubt it was believed that to enter an ἠλύσιον would have the same consequences (cf. HORACE, *A. P.*, 471): the lightning god was ever present there, still living and active. Conversely (on the well-known principle of "similia similibus") the lightning god could also rid one of madness, cf. No. 115 *c* and Ζεὺς Καππώτας (p. 13 above).—A reminiscence of the old belief that the most solemn oath was sworn by the lightning god (cf. No. 115 *f*) seems to be preserved in the image of the awe-inspiring Ζεὺς Ὅρκιος in Olympia (PAUS., V. 24, 9); he held a thunderbolt in each hand.

f. (Juppiter Lapis; sacrificial ritual of the fetiales.) GELLIUS, I. 21,4: Jovem Lapidem, quod sanctissimum jusjurandum habitum est.—FESTUS (PAULUS), p. 85: Lapidem silicem tenebant juraturi per Jovem hæc verba dicentes: si sciens fallo, tum me Diespiter salva urbe arceque bonis ejiciat, uti ego hunc lapidem.—POLYB. III. 25, 6 *seq.*: Τὸν δὲ ὅρκον ὀμνύειν ἔδει τοιοῦτον (279 B.C.), ἐπὶ μὲν τῶν πρώτων συνθηκῶν Καρχηδονίους μὲν τοὺς θεοὺς τοὺς πατρῴους, Ῥωμαίους δὲ Δία λίθον κατά τι παλαιὸν ἔθος, ἐπὶ δὲ τούτων τὸν Ἄρην καὶ τὸν Ἐνυάλιον. ἔστι δὲ τὸ Δία λίθον τοιοῦτον· λαβὼν εἰς τὴν χεῖρα λίθον ὁ ποιούμενος τὰ ὅρκια περὶ τῶν συνθηκῶν, ἐπειδὰν ὁμόσῃ δημοσίᾳ πίστει, λέγει τάδε· εὐορκοῦντι μὲν ποιεῖν τἀγαθά· εἰ δ' ἄλλως διανοηθείην τι ἢ

πράξαιμι, πάντων τῶν ἄλλων σωζομένων ἐν ταῖς ἰδίαις πατρίσιν, ἐν τοῖς ἰδίοις νόμοις, ἐπὶ τῶν ἰδίων βίων ἱερῶν τάφων, ἐγὼ μόνος ἐκπέσοιμι οὕτως ὡς ὅδε λίθος νῦν, καὶ ταῦτ' εἰπὼν ῥίπτει τὸν λίθον ἐκ τῆς χειρός.—LIVY, I. 24, 8: (If the Roman people does not keep the compact) tum illo die, Juppiter, populum Romanum sic ferito, ut ego hunc porcum hic hodie feriam; tantoque magis ferito, quanto magis potes pollesque. id ubi dixit, porcum saxo silice percussit.—LIVY, IX. 5, 3: Eum ita Juppiter feriat, quemadmodum a fetialibus porcus feriatur.—LIVY, XXX. 43, 9: Fetiales quum in Africam ad foedus feriendum ire juberentur (201 B.C.), ipsis postulantibus senatus consultum factum est in hæc verba, ut privos lapides silices privasque verbenas secum ferrent.—SERVIUS *ad Æn.*, VIII. 641: A fetialibus inventum, ut silice feriretur (porcus) ea causa quod antiquum Jovis signum lapidis siliceni putaverunt esse.—HESSELMEYER, *Korrespondenzblatt für die höheren Schulen Württembergs*, 1907, pp. 260–270 and 295–309, thinks that the *lapis silex* which was worshipped as Juppiter Lapis, has nothing to do with the *lapis silex* which was used in the ceremonies of the fetiales, and that neither of them has any connection with the thunderstone ideas. But his reasoning is hardly convincing and cannot be said to have shaken the established view (last advanced by WISSOWA, *Religion und Kultus der Römer*, pp. 103 *seq.*).

116–133. Other Continents.

116. **Asia Minor.**—The Turkish peasantry call the stone axes thunderstones (*yildirim tachi*) and use them as a protection against lightning and for magic cures: MARTIN, *Revue archéol.*, 1877, II. p. 164.—For the lightning worship in the early ages see pp. 15, 26 and 50 *seq.*

117. **Arabia.**—In the National Museum is a series of small amulets of cornelian, from Yemen; they are pierced for threading on a string, but their shape is in other respects an imitation of the prehistoric arrowheads. In all probability they have been regarded as thunderstones [cf. No. 118 *a* and *b*].

118. **Babylonia and Assyria.**—*a.* For the usual representation of the lightning see p. 43. The conception of the

lightning as an arrow [cf. No. 134], which occurs in several places in western Asia, is also transferred to the Assyrio-Babylonian thunderweapon; thus Assur is sometimes depicted in the act of shooting the lightning from his bow: MENANT, *Cylindres*, II. figs. 2 and 24 (cf. PERROT-CHIPIEZ, II. p. 89; LAJARD, *Culte de Mithra*, pll. 25, 5 and 54 C, 1).

b. The Assyrian kings sometimes carry small lightning-images amongst the amulets placed on their necklaces, the bipartite form being represented on the royal steles of the ninth century B.C. (Assurnasirpal's stele: *Brit. Mus. Photo.* [Mansell], No. 353; MASPERO, III. p. 45), while the tripartite form is found on royal steles of the latter half of the eighth century B.C. and later (PERROT, III. p. 763, fig. 429).—On a necklace of unknown date from Mugheir we find small reproductions of axes that may perhaps have the same significance (*Brit. Mus. Photo.*, No. 352 *a*).

c. For fetish-worship of a club, a spear and other weapons and implements, see A. DE LONGPÉRIER, *Œuvres complètes*, I. p. 170; the same, *Congrès préhistor. de Paris*, 1867, p. 37; HEUZEY, *Revue archéol.*, 1887, II. pp. 259 *seq.*; the same, *Catalogue des antiquités chaldéennes*, p. 78; HEUZEY and SARZEC, *Découvertes en Chaldée*, pl. 30 *bis*, No. 13 *b*; *Revue archéol.*, 1887, II. p. 273; MASPERO, I. p. 642; SCHEIL, *Recueil de travaux*, XVI. pp. 176 *seq.* (cf. p. 39 above).

d. For the Assyrio-Babylonian thundergod (Adad), see pp. 24 and 43 *seq.*

119. India (including Bactria, Ariana, etc.).—*a.* According to the *Rig-Veda* the thunderbolt (*vajra*) is Indra's usual weapon in the battle against his enemies; he fashioned it himself (I. 121, 3) or it was made by Tvashtar (VI. 17, 10); it has 1000 points, 100 edges, etc. (some of the passages from the *Rig-Veda* reprinted in ROSCHER, *Die Gorgonen*, pp. 66–67). It is called *vajras āyasas*, *i.e.* of iron or copper, in one place *āçman* (*i.e.* stone, Greek ἄκμων, cf. *Perkuno akmu*, No. 98) *āyasas*, or *v. hiranyayas*, *i.e.* golden, a common epithet for attributes of the gods (see GRASSMANN, *Wörterbuch zum Rig-Veda*). The root of the name *vajra* means hard, strong; *vajra* is equivalent to diamond, but is also a name for plants containing a milky juice (euphorbia).

b. In a later priest-myth, *Mahabharata*, IX. 51, it is said of the great ascetic, the wise man (*ṛshi*) Dadhīca, that Indra became afraid of his asceticism and tried to tempt him, but in vain. During a war with the demons (the Asuras) Indra was at his wit's end; his only expedient was to make a weapon from the bones of Dadhīca. Upon the entreaty of the gods Dadhīca surrendered his life, and from his bones Indra made thunderbolts, discs, and clubs of various kinds for the fray. Dadhīca is mentioned in *Rig-Veda*, I. 84, 13, under the name of Dadhyañc "Indra with the bones of Dadhyañc slew 99 Vritras" (*i.e.* monsters); but here it does not say that a thunderbolt was made out of the bones. *Dadhīca* means "sprinkling milk"; Indra (according to *Rig-Veda*, X. 48, 2, a passage, however, which is difficult to construe) gives him "kuhreiche Ställe." [In procuring and nterpreting the material for this subject in Sanskrit literature Professor Dines Andersen has kindly given the author his help.] —The connection between the thunderweapon and milk which shows itself in various ways in the early Indian sources is a curious one: it recalls the connection between the thunderstone and milk, milking, diseases of cows, etc., in the north of Europe; but the analogy has not hitherto been explained with any certainty (cf. MANNHARDT'S attempt, *Die Götterwelt*, I. p. 194: the rain = the heavenly milk).

c. The Greek keraunos often occurs on coins, and this is at all events partly due to the influence of cults. It is the chief type on coins from the time of Demetrios, king of India, the successor of Euthydemos I, about 200 B.C.: *Brit. Mus. Cat.*, p. 163, pl. 30, 3 (with Greek and Indian inscriptions). It is often in the hand of Zeus or Athena (cf. ROSCHER, *Lexikon der Mythologie*, I. p. 692): for example, on coins from Bactria and India from the time of the kings Diodotos, Agathokles, Heliokles, Archebios, Azes, Vonones, Spalirises [Zeus], and Apollodotos II, Straton I, Menandros, Dionysios, Zoilos, Apollofanes, Amyntas, Azes [Athena]. On somewhat later coins from the time of King Hooerkes (OOHPKE, Huvishka: 111–129 A.D.), the keraunos together with the trident and other attributes has passed to the four-armed Siva: the transference of the Greek thunderweapon to the Indian world of religious ideas is

thus complete: *Brit. Mus. Cat.*, p. 147, pl. 28, 15 (cf. Introduction, p. LI).

d. In literature Siva's weapon is called in some places simply *çūla* (*i.e.* spear), from which the god gets the epithet *çūlin*, *çūlapāni*, etc.; in others *triçūla* (*i.e.* trident). Professor Dines Andersen has kindly given me the following quotations from the *Mahabharata* in translation. It is said (XIII. 860 *seq.*) that King Mandhātar was killed by the giant Lavana with Siva's sula which he had borrowed. "This sula has exceedingly sharp points, is very terrible and formidable, as one who stands with threatening brow frowning with three wrinkles[1]. It is without smoke (*i.e.* with a clear flame), flaming like the rising death-sun (*i.e.* the sun at the end of the world), indescribable, with snakes in its hand like Antaka (*i.e.* the death-god, Yama) with his lash in his hand." In III. 14,551, again, there is a description of the battle array and weapons of the gods: "And after Yama comes Rudra's sharp, three-edged, gloriously ornamented sula called the victorious."—On the coins of the kings of Bactria and India, beginning with those of Kadfises II (OOHMO KAΔΦICHC), the trisula and Siva himself are often depicted: see H. H. WILSON, *Ariana antiqua*, London, 1841; V. SALLET in *Zeitschrift für Numismatik*, VI. (1879), pp. 165 *seq.*, 271 *seq.*, pll. iv.–x.; *British Mus. Cat.*, pp. 124 *seq.*, pl. 25 (Kadfises II; trisula as chief type on a small gold coin, pl. 25, 10), pp. 129 *seq.*, pl. 26 (Kanerkes), pp. 159 *seq.*, pl. 29 (Bazodeo).

e. Modern worship of stone axes in southern India; cf. pp. 8 *seq.* In the ethnographical collection in the National Museum the following objects come under this head: OBcI 27–30: a series of stone axes from the Malayals of the Shevaroy Hills, collected by the missionary Mr Löventhal (letter of Oct. 6, 1893); OBcI 31: seven stone axes from the same district collected by the missionary Mr Berg; Da 601–603: complete set of objects from a pariah-altar in the neighbourhood of Vellore, sent by Mr Löventhal (letter of Apr. 10, 1895); Da 604: set of three stones from another pariah-altar, also from Mr Löventhal (letter of Apr. 10, 1895). According to Mr Löventhal's

[1] The three vertical wrinkles just above the nose are meant; their shape) | (recalls the three prongs of Siva's weapon.

letter the stones Da 601 represent Mari-Attal, the goddess of cholera and small-pox, which is usually the case; in a few villages the corresponding stones would seem to represent Ganesa, and in some other districts further south the spirits of ancestors. From this Mr Löventhal infers that the stone cult is older than the Mari-Attal cult and only incidentally connected with it. See text, pp. 8 *seq.*, where the main part of Mr Löventhal's excellent information about the objects procured by him is given.—There is perhaps no connection between the thunderstone idea and the fact that the Badagas of South India regard the stone axes (which are called *svayamphu*, *i.e.* self-born) as a cure for barrenness: *Z. f. E.*, 8 (199); specimens in the Museum für Völkerkunde in Berlin (Ic 5171, 5173–9).

120. **Nepal.**—See above, p. 45.

121. **Assam.**—Stone axes pass for thunderstones: *Journ. Anthrop. Inst.*, I. p. lxii.

122. **Burma.**—Stone axes are regarded as thunderbolts (*mo-gio*): *Z. f. E.*, 23 (695); 26 (589). *Proc. Asiat. Soc. of Bengal*, 1869, pp. 182 *seq.*: Stone axes are called thunderbolts and sink far down into the earth, but come to the surface of their own accord after about a year; there are various tests of genuineness (*e.g.* a tree cut with the stone axe does not sprout again; the stone resists gunshot, etc.); they protect houses against fire; and are taken in the form of powder against internal diseases.—Stone axes dive with the lightning into the earth; come to the surface again and may be found by digging three years later; small pieces pounded are a cure for bad eyes: *Proc. Soc. Antiq.*, 2nd ser., III. p. 97. Cf. *Matériaux pour l'hist. primitive de l'homme*, XXII. (1888), p. 35.

123. **Cambodia.**—Prehistoric stone implements are regarded as thunderstones: NOULET, *L'âge de la pierre polie et du bronze au Cambodge* (Toulouse, 1879), p. 10.

124. **Malacca, Sumatra, Java and other isles.**—Among the Malay peoples of Celebes, Malacca, etc., and among the Bataks and other tribes prehistoric stone antiquities pass for thunderstones. They are said to be always found near trees that have been struck by lightning. To bring down rain one winds leaves round the stone and leaves it overnight in a tub of water:

G. A. WILKEN, *Handleiding v. d. volkenkunde van Nederlandsch-Indië*, Leyden, 1893, pp. 85 *seq.* (cited there: WILKEN, *Het animisme bij de volken v. d. Ind. Archipel*, I. pp. 134–7; PLEYTE, *De prœhist. steenen wapenen uit den oostindischen Archipel, Bijdr. t. d. taal-, land-, en volkenkunde van Nederl. Indië*, 5. volgr. II. pp. 586 *seq.*).—The natives of Sumatra and Malacca call the stone axes thunderstones: *Matériaux pour l'hist. de l'homme*, 1885, p. 484; *Z. f. E.*, 1879 (300); *Nature*, XXXIV. 52.—Java: *Archæol. Journ.*, XI. p. 121; C. LEEMANS, in *Tijdschrift voor de wis- en natuurkund. wetensch.*, V. p. 112.—The stone implements are called "thunder teeth"; the lightning often strikes palm trees, especially when they grow apart by themselves, and sometimes cleaves them in the same way as would a powerful blow with an axe; the natives believe that the tree has really been struck by a bolt and declare that such a bolt has often been found near the stricken tree when men have dug deep enough into the earth: ROULIN, *Compte rendu de l'acad. des sciences*, LXVII. (1868), p. 1326, from information supplied by van de Poel, resident for Cheribon. —Stone implements and various other stones are regarded as thunderstones that come down with the lightning; they bury themselves deep in trees that are struck by lightning; tests of genuineness: stuff, wound round the stone, will not burn when the stone is put in the fire; weapons, whetted on the thunderstone, will pierce anything; the thunderstone is a protection against wounds; it is laid in water, which is drunk, or applied externally, against disease (fever, inflammation of the eyes): G. E. RUMPHIUS, *De amboinsche Rariteit-Kamer* (1741), pp. 207 *seq.*—Amboina: The stone axes were generally supposed by the inhabitants to be thunderstones, hence their name *bidji goentoer*, or, owing to their shape, *gigik goentoer* (*i.e.* thunder teeth). They are highly esteemed as talismans, a peculiar healing power being ascribed to them. As such some had been preserved in families as heirlooms time out of mind: letter (in the archives of the National Museum) from van Deintze, resident for Amboina, Sept. 4, 1876.

125. **Philippine Islands.**—ANDREE, II. p. 38.

126. **China.**—Stone antiquities are spoken of even in the eighth century by the name of *p'ili*, *i.e.* thunderbolt: *Z. f. E.*, 21

(493); also in the Emperor Kanghi's encyclopædia (cited by TYLOR, *Early History*, p. 207; *Matériaux pour l'hist. de l'homme*, 1870, p. 544, etc.).—Stone axes are regarded as thunderbolts: they penetrate deep into the earth, and come to the surface in the course of nine years; small pieces are pounded and taken as medicine: J. ANDERSON, *The Stone Implements of Yunan*, pp. 1–2.

127. **Japan.**—Stone axes are thunderbolts: *Z. f. E.*, 10 (430)–(431), 18 (217). Stone axes are thunderbolts: both axes and arrowheads fall down from the sky in thunderstorms: FRANKS (and ENGELHARDT) in the *Transactions of the Congress of Prehistoric Archæology at Norwich* (1868), pp. 260 *seq.*—*Kô*, the thunderweapon of the Buddhist priests (see p. 46), is depicted in ROCKHILL, *Ethnology of Tibet*, pl. 41; in *Guide illustré au Musée Guimet* (1905), p. 263; *ibid.* p. 153, a Japanese *gokô* is wrongly represented as a Tibetan thunderweapon.

128. **Siberia.**—Stone implements pass for thunderstones among the Giljaks and Golds: *Aarb. f. nord. Oldkynd.*, 1887, p. 257.—Flint arrowheads are regarded as thunderstones; three years after the stroke they come to the surface; as a remedy for lumbago one drinks spirits in which the thunderstone has lain: GMELIN, *Voyage en Sibérie*, II. (Paris, 1767), pp. 118–119.

129. **The Guinea Coast.**—MONRAD, *Skildring af Guinea-kysten* (Copenhagen, 1822), p. 115 (see above, p. 8).—In Tschaudyo (Togo) many thunderstones (*i.e.* stone axes) have been found; in the Tim district sacrifices are made to them: *Z. f. E.*, 31 (188). In Togo there are also small ceremonial axes and similar implements of iron which are said to have some connection with the worship of the lightning or the lightning god. Implements of this kind are preserved in the ethnographical collections in Berlin and Cologne (Rautenstrauch-Joest-Museum). Through the kindness of Director Foy, Cologne, illustrations are here given of two objects from Atakpame, received from a German missionary, with the description "Verbotszeichen des Blitzgottes" (figs. 35–36); their sizes are 28 and 31 centimetres respectively. Other objects of a similar kind in the same Museum bear the description; "magische Äxte der Blitzgottverehrer; ihre Berührung bringt Tod." More accurate information about these

curious cult-objects has not been obtainable.—In the ethnographical collection of the National Museum there are three small stone axes (Nos. OCIb 1–3) from the Gold Coast where the Akra negroes call them *jongmar limbe, i.e.* god-axe (or axe-god?); cf. *Journ. Anthrop. Inst.*, XII. p. 449, with illustration p. 451.—Stone axes as attributes on bronze figures from Benin: *Z. f. E.*, 30 (154). Several of the old bronze figures in the Museum für Völkerkunde at Berlin (on the subject of which a publication is being prepared) are furnished with them; a king or similar person holds an axe in his hand, sometimes in a case on

Fig. 35.

Fig. 36.

which snakes are depicted in relief; often the axe is placed on the plinth of a figure-group of the curious large heads or of the "Fetischbäume." Cf. F. V. LUSCHAN, *Die Karl Knorrsche Sammlung von Benin-Altertümern* (1901), pp. 72, 83 and 85, figs. 51 and 62.—Stone axe placed on an Ashanti altar; hung by a string in front of the door; pounded and used as a remedy for rheumatism; sinks far into the earth and comes up again after several years: *Journ. Anthrop. Inst.*, XII. p. 450.—The thundergod Sango is also called Dzakuta, "the stone-thrower," because he throws down the stone axes that are found on the ground: Yoruba: BOWEN: *The Yoruba Language*, p. xvi. (in *Smithsonian Contrib. to Knowledge*, X. 1858), cf. EVANS, *Stone Implements*, 2nd ed., p. 60.

130. **West Sudan.**—Les noirs...considèrent les haches polies, et en général, tous les caillous polis, comme des pierres de foudre...D'après eux, lorsque la foudre tombe en un endroit, elle y projette une hache polie : c'est elle qui occasionne les dégâts, et il devient indispensable de l'extraire, sinon la foudre tomberait de nouveau au même endroit. Mais on s'exposerait aux plus grands malheurs en cherchant à retirer cette pierre de foudre ; ou en touchant aux personnes ou aux animaux foudroyés. Il faut avoir recours au Faiseur de pluie.

His mode of proceeding is then described, and it is said that in winter they avoid mentioning the word *sankalima* (*i.e.* thunderstone), which may attract the lightning: FR. DE ZELTNER, in *L'Anthropologie*, XVIII. 1907, p. 542 (from the neighbourhood of Yelimane and Nioro).

131. **Other parts of Africa.**—Stone axes as amulets: Tschitimbe (Lake Tanganyika): ANDREE, *Parallelen*, II. p. 40 (quoting Livingstone's *Travels*).—Among the Monbuttus (Central Africa) prehistoric stone axes pass for thunderstones; "such axes are often found in the trees they have struck"; they are handed down as talismans from generation to generation: *Z.f.E.*, 16 (294).—Among the Niam-Niam people stone axes are supposed to have fallen from the sky and are the object of worship: *Bull. de l'institut égyptien*, 1886, No. 14 (according to DE NADAILLAC, *Mœurs et monuments des peuples préhistoriques*, p. 13).

132. **North America.**—Both in North and South America the notion that thunder is caused by a large bird is widely spread: see *e.g.* TYLOR, *Primitive Culture*, II. pp. 237 *seq.* (An Eskimo picture of the thunderbird is given by HOFFMANN, *Graphic Art of the Eskimos*, pl. 72.) We have a few records of stone implements being regarded as thunderstones, but circumstances always suggest the probability of the idea having been imported from Europe: see TYLOR, *loc. cit.*; A. LANG, *Myth, Ritual and Religion*, II. (1887), p. 61.

133. **South America.**—For the thunderbird, see No. 132. From several places there are records of thunderstones as stone implements, but they are always given under European names (Portuguese, Dutch, etc.); scholars are no doubt right in supposing the idea to have been brought in by the Europeans

(cf. MONTELIUS, *Sveriges forntid*, I. p. 160).—Dutch Guiana: A certain kind of whetstone is called *dondersteen*: LEEMANS, *Notes and Queries*, 2nd ser., VIII. p. 92.—Venezuela: Stone axe in the ethnographical collection of the National Museum (ODIe 113), found at Varinas, "called by the natives *piedra de rayo*."—Brazil: Stone axes are called *corisco*, *i.e.* flash of lightning; when they are found they are thrown far away so as not to attract the flash of lightning which "seeks its brother": P. W. LUND, *Ann. f. nord. Oldkynd.*, 1838-9, pp. 159 *seq.*; *Aarb. f. nord. Oldkynd.*, 1887, p. 223. A *rajo* ("flash of lightning," *i.e.* a stone axe) from Brazil was presented to the National Museum in 1841 by Dr P. W. Lund.—Paraguay: *Journal of American Folk-Lore*, XVII. (1904), p. 203.—Other reports given by ANDREE, II. p. 40.

134–144. Some References[1].

134. Nature of the thunderweapon; cf. p. 38.—Stone axe: *passim*.—Metal axe: 110 *a*, 111 *b*, 129; cf. pp. 19 *seq.*, 50 and 56.—Arrow: 44–46, 81, 94 *e*, 96 *a*, 102, 103, 104, 106, 110 *a*, 113, 115 *b*, 117, 118 *a*, 127, 128.—Globular stone: 83, 86–88, 94 *d*, 98, 100, 107, 110 *a*, 113, 115 *a*.—Echinite: 48–71, 83, 94 *c*, 110 *a*.—Belemnite: 5, 20, 39–47, 81, 94 *b*, 96 *a*, 98, 104, 107, 109, 110 *a*.—Garnet: 106.—Rock crystal: 81, 96 *a*, 97, 112, (115 *a*).—Meteorolite: 107, 108; cf. p. 13.—Other stones: 83, (97), 104, 113, (115 *a*).

135. Physical conditions and properties.—Thunderstone found where the lightning has struck: 14, 17, 18, 83, 94 *f*, 109, 110 *a*, (115 *a*), 124, 131.—Sinks far into the earth (and comes to the surface again later on): 82 *b–c*, 94 *g*, 96 *a*, 98, 101, 104, 110 *a*, 112, 113, 114, 115 *c*, 122, 126, 128, 129.—Turns red when a storm is rising: 82 *m*.—Perspires: 69, 94 *h*.—Moves: 94 *h*.—Calls forth thunderstorms: 113, 130, 133.—Tests of genuineness: 94 *l*, 113, 122, 124.—Contains a diamond: 45, 54, (115 *a*).

136. The thunderstone's power of killing: 91, 101, (106), (112), 122, 124, 129; cf. p. 33.

[1] The figures denote paragraphs of Chapter X; references to the preceding text are given by page-numbers.

137. Fear of the thunderstone, sanctity of places struck by lightning (taboo): 102, 104, 110 *a*, 113, 115 *d–e*, 130.

138. Where kept.—Out-of-the-way place in the house: 15, 51, 53.—Under the roof: 6, 7, 12, 13, 15, 18, 26, 29, 37, 59, 69, 94 *k*, *m*, 100, 110 *a*.—Immured in the house: 14, 15, 16, 82 *f*, 94 *k*, 96 *a*, 109.—Behind the wainscot: 35.—Under the floor: 14, 19.—Under the threshold: 103, 110 *a*.—On the top of the four-poster: 14, 18.—On the clock: 69.—On the shelf under the beams (the milk shelf): 25, 55, 56, 63, 67.—On the hearth: 34.—In the bed: 23.—In the locker of the chest (or the bureau): 60, 62, 64.—Under the bed or under a chest: 15, 27, 53, 58.

139. The thunderstone (the lightning-image) worn as an amulet: 57, 64, 67, 80, 82 *k*, 96 *a*, 99, 110 *a*, 113, 114, 115 *b*, 118 *b*, 124, 131.

140. Use of the thunderstone.—Acts as protection against lightning: *passim*.—Against trolls: 39, 72, 82 *g*, 86, 87, 94 *m*.—Against the nightmare: 10, 40, 82 *l*, 83.—For various healing purposes: *passim*.—Pounded, for healing purposes: 36, 82 *d*, 82 *k*, 94 *r*, 101, 122, 126, 129.—Heals cattle: (32), 82 *d*, 94 *p*, 101, 107, 108, 110 *a*.—Near milk: 25, 32, 50, 56, 61, 69, 71, 83, 94 *o*, 98, 119 *b*.—Near corn: 82 *e*, 94 *s*.—General bringer of good luck: 33, 82 *i*, 102, 107.

141. Stone axes with figures or inscriptions engraved at a later period: 74–76, 84, 85, 95, 115 *b*.

142. The thunderstone hurled by a personal god: 81, 98? 104, 106, 129.

143. Doubling or repetition of the lightning-image (the thunderstone): 6, 80, 110 *b*, 115 *e–f*, 118 *b*, 119 *e*; cf. pp. 20 and 30.

144. Oath sworn by the thunderstone: 94 *t*, 113, 115 *e–f*; cf. pp. 8 and 31.

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